Technology Review

Edited at the Massachusetts Institute of Technology

November, 1966

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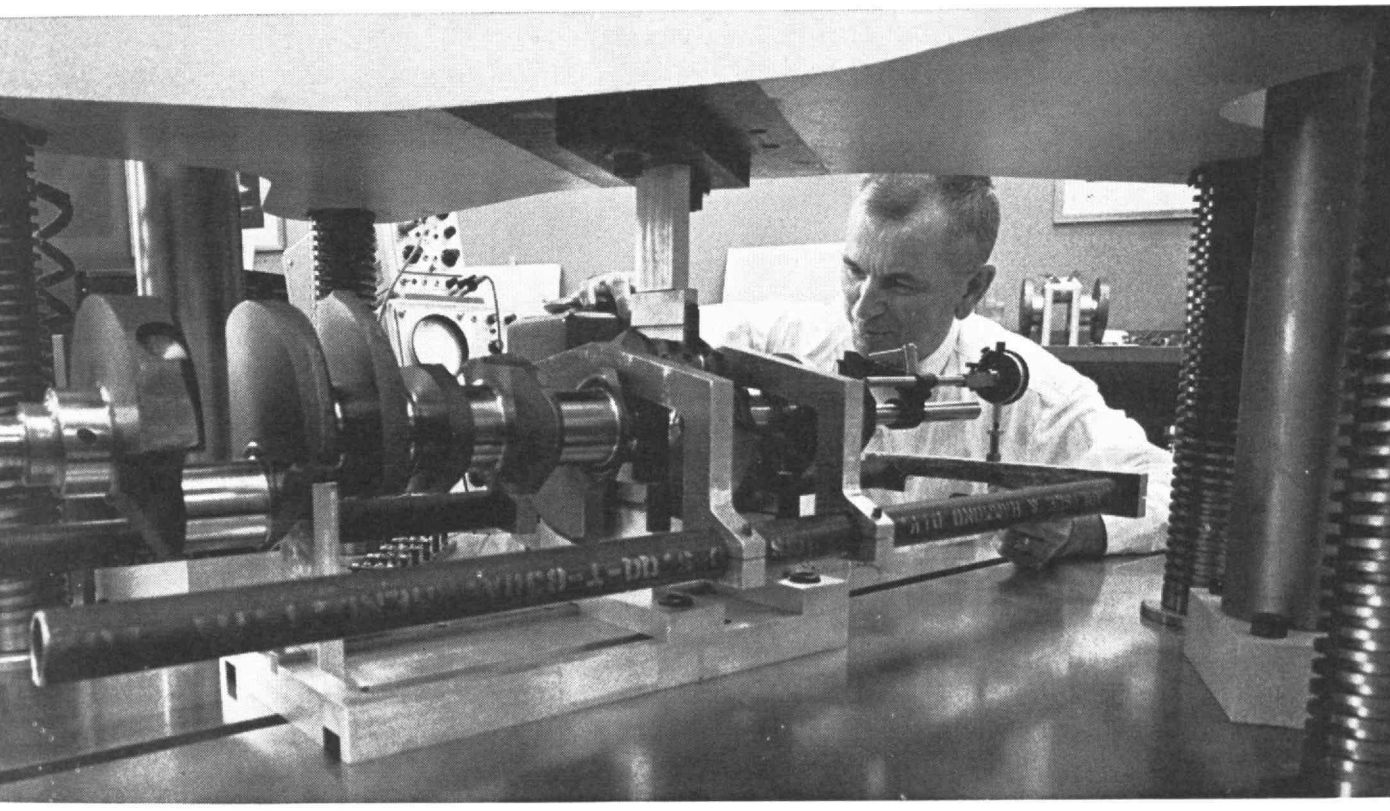

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Review on Science

The Lessons of Mohole

By Robert C. Cowen, '49

Mohole, the project to drill through the earth's crust beneath the sea, is as dead as a canceled federal contract. But its ghost still haunts the American scientific community. It points ominously toward 1967 when a new Congress will again take up the question of how much money to assign to basic research and how to spend it.

The $125-million project was killed in the name of wartime economy. Federal civilian science budgets all are feeling the squeeze of rising costs in Vietnam. Basic research budgets are also under mounting congressional pressure to spread money more widely around the country, rather than concentrating it in a relatively few established research centers.

In holding the fiscal 1967 budget of the National Science Foundation to less than last year's $480 million, instead of granting the $525 million requested, Congress bowed to the needs of Vietnam. It gave NSF more money to spread around within that budget by refusing the $19.7 million earmarked for Mohole.

Actually, the Mohole project succumbed to a variety of weaknesses. These included the enmity of some of its original scientist-sponsors. But, in Congressional eyes, it also symbolized mismanagement and wastefulness. It tarnished the argument that imaginative research should be supported for its own sake in spite of sharply rising costs. For scientists, its clouded history exemplifies how not to handle a potentially valuable research program to make the most of increasingly stringent federal support.

The Mohole Concept

Mohole embodied an idea advanced before World War II by Thomas A. Jaggar (M.I.T. Department of Geology, 1902-1917) of the U.S. Geological Survey. He suggested drilling completely through the earth's crust into the underlying mantle to help answer basic questions about the structure and evolution of our planet. The project took its name from the transition zone between crust and mantle—the Mohorovicic Discontinuity, itself named for the Yugoslav seismologist, Andrija Mohorovicic.

Jaggar's idea was picked up in 1957 by a group of American geophysicists who met (and still meet) informally to consider any scientific notion however foolish it may appear at first sight. They go by the whimsical title, the American Miscellaneous Society. They extended Jaggar's suggestion into a wide-ranging program to dig many holes in the sea floor. This was to culminate in the most difficult task of all, drilling to the mantle in a place where the water might be 20,000 feet deep.

Their scheme won support. Soon it was underwritten by a grant from NSF to be managed by an *ad hoc* board of the National Academy of Sciences, the AMSOC-Mohole Committee.

The early phase of their program was an unqualified success. Using the most advanced oil-drilling ship of the time, the project in 1961 drilled several experimental holes in the Pacific Ocean bed off lower California. The deepest hole was 1,035 feet in a water depth of 3,139 feet. The deepest hole in deep water was drilled to a depth of 600 feet in 11,700 feet of water. This proved out the concept. Both NSF and the scientists were ready to move into the design and building of equipment for extensive deep-water drilling.

A Hole to Nowhere

But at this point the project began to come apart.

For one thing, the scientists who had been managing it realized that they now would be involved in a major management task that could bite heavily into their individual research time. This they did not want. So the management task fell by default to NSF, which at that time was equipped only to fund research, not manage it.

Secondly, the AMSOC team and the NSF management soon fell out over policy. The scientists, for the most part, wanted a program in which many holes would be drilled, slowly working up to the challenge of the big one. They felt this would yield maximum scientific information at minimum cost. NSF, however, decided to try at once to build the equipment for the big hole, while acknowledging that it should be used to drill in a number of places. After trying to work with the new scheme for awhile, a number of the AMSOC scientists turned their backs on the project. Some remained estranged to its end.

Then, NSF began to incur the ire of many congressmen. In picking a prime contractor, it selected Brown and Root, a Houston engineering firm. The company had ranked fifth in the bidding. But it was in the district of the late Representative Albert Thomas, chairman of the House Independent Offices Appropriations Subcommittee which passes on the NSF budget. Subsequently, an investigation report by the Comptroller General stated, "We are unable to conclude that the award to Brown and Root was not in the public interest." Yet many congressmen are still convinced that the contract was won through political collusion.

Finally, NSF was the victim of grossly underestimated costs. The estimates ballooned from $15 million to $40 million a few years ago to $125 million and perhaps more by the time the project was killed.

Costs had already gotten so far out of hand by the spring of 1963 that the Bureau of the Budget froze Mohole funds until a thorough review of the project was made. Mohole weathered this storm. In spite of continual congressional sniping, it began to make headway. A year ago, Presidential Science Adviser Donald Hornig said that, while Mohole cost was a matter of official concern, "there's no question but that it is going to go ahead."

And so it seemed to be. Last January, NSF ordered construction of the drilling rig to move at full speed. As late as May 4, NSF Director Leland J. Haworth reportedly said that too much money had been sunk in the program to think of curtailing it now. The next day, the House Appropriations Committee issued its report turning down all funds for the project. Representative Thomas had died early in the year and the committee's enthusiasm for Mohole died with him.

In spite of a presidential plea to save Mohole and attempt by the Senate to persuade the House to change its mind, the House as a whole supported its committee. NSF now is liquidating the project. An estimated $35 million, perhaps more, has been largely wasted.

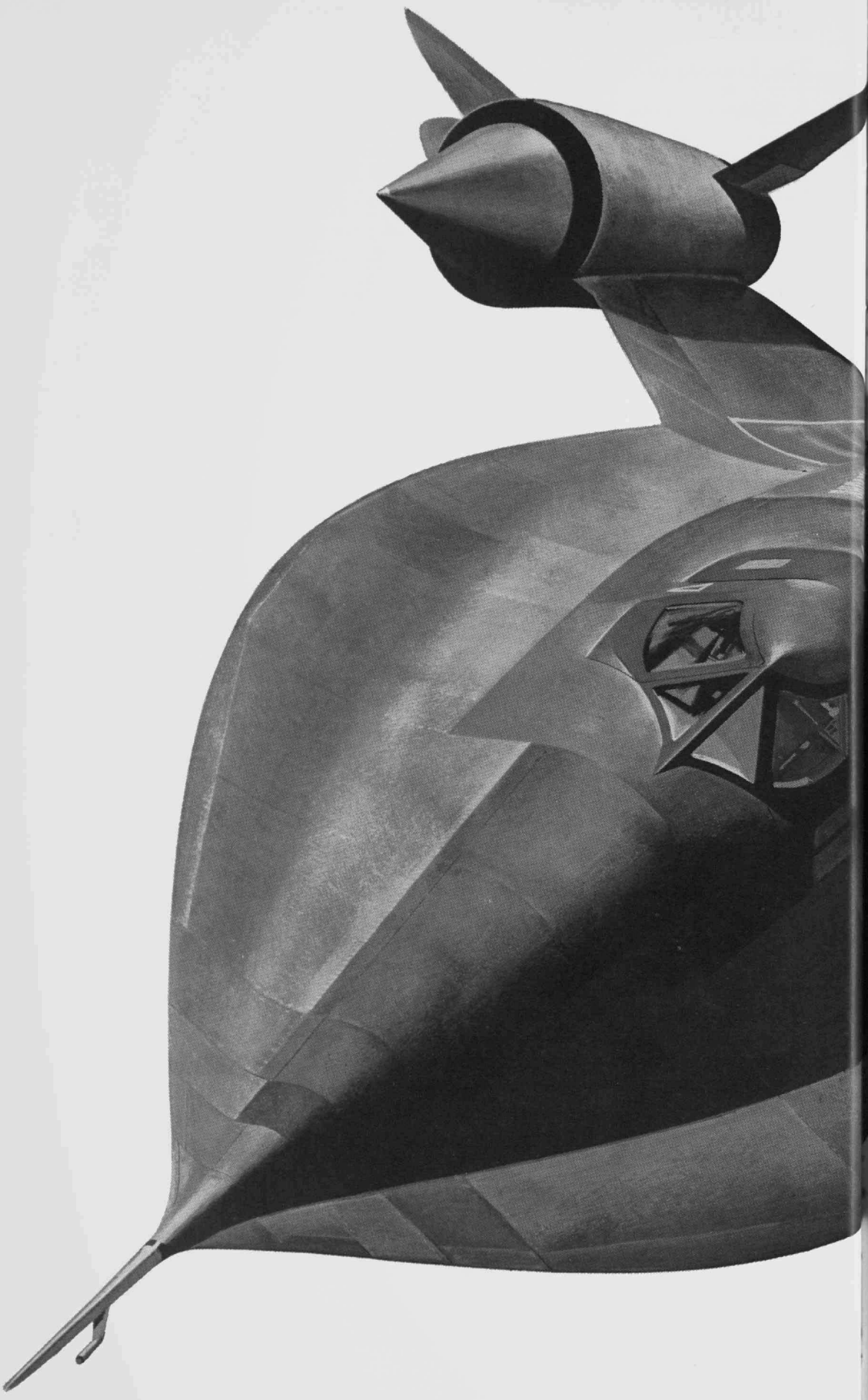
Skilled Argument, Wise Management

Regardless of the political overtones in the House action, this is a warning to scientists to sharpen their own procedures in managing and justifying basic research.

It can be argued that all the trouble began when the original Mohole scientists allowed management of the project to slip to NSF. Perhaps some of their research time would have been sacrificed if this had not happened. But, in the end, the program might well be alive and scientifically profitable today. This argument is supported by the fact that some of the geophysicists are going to have their holes anyway.

(*Concluded on page 16*)

Robert C. Cowen, '49, joined the *Christian Science Monitor* in 1950 and has been Natural Science Editor since 1957. His Review on Science will appear here monthly.



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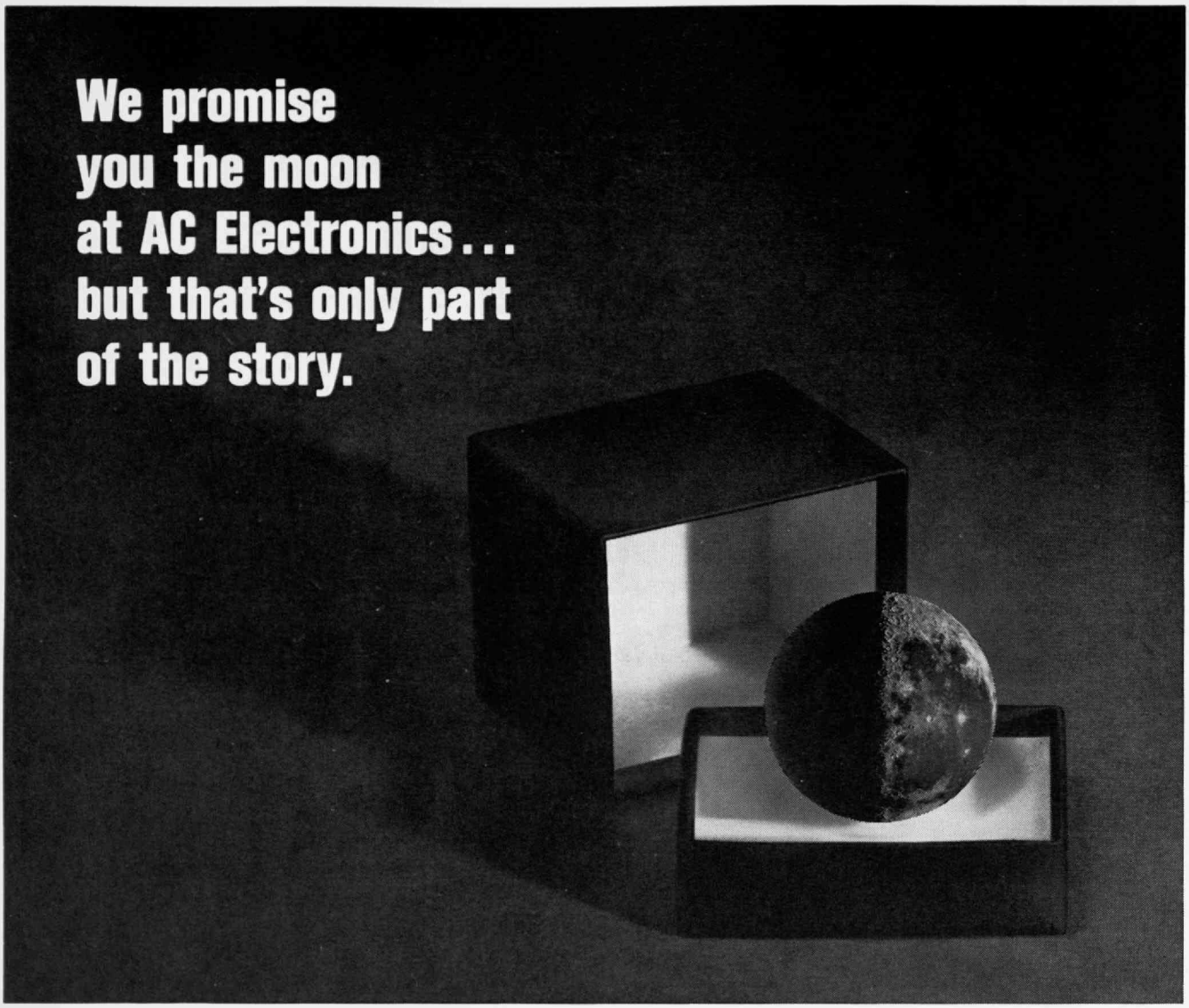

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Review on Books

The Proper Study

By Joseph Mindel

According to the classical (and prevailing) view of science, the scientist studies things and events in the external world by techniques—the scientific method—designed to yield reproducible data and objective, verifiable knowledge. The method creates and maintains a separation between the scientist and the objects of his study, so that his characteristic attitude is cool, impersonal, detached, disinterested as to outcome. The power of this system of logic and techniques is awesome, whether measured by the deepening and broadening of our understanding of the universe, from the atomic to the galactic scale, or in terms of the technological structure for which it provides the foundation.

Yet, between atoms and galaxies lies a region—the human realm—in which classical science has yielded relatively little return. The explosive expansion in the natural sciences has not been matched in fields, such as psychology, ethnology, and sociology, that are concerned with man as an individual and in societies. Professor Abraham H. Maslow, chairman of the department of psychology at Brandeis University in Waltham, Mass., explores the problem in *The Psychology of Science: A Reconnaissance* (Harper and Row, New York, 1966, 168 pp., $4.50). The book, which is an elaboration of the Eighth John Dewey Society Lecture, is presented as "a critique (à la Gödel) of orthodox science and of the ground on which it rests, of its unproved articles of faith, and of its taken-for-granted definitions, axioms, and concepts." This is an overambitious description of the informal, readable discussion, which retains the personal qualities of a lecture. More accurately, the book provides "an examination of science as one philosophy of knowledge among other philosophies," as well as suggestions for enlarging the scope and effectiveness of orthodox science.

Neither Objective Nor Detached

It is not difficult to show the falseness of the traditional claim that science is not concerned with values, with the aims, purposes, or justifications of action. The scientific process proceeds through choice and selection—that is, through evaluation. Not all problems are important or interesting, not all facts are worth noting and recording, not all solutions are clean or elegant. In choosing to engage in the practice of science, the scientist makes the most significant value judgment of all, declaring implicitly, if not consciously, that knowledge of "truth" is inherently valuable, committing his self and his life on the basis of this judgment.

It follows, then, that the scientist is not really objective and detached, as the folklore of science pictures him. He is involved in the processes and the subject matter of science. It is one of Dr. Maslow's major themes that the manner of the involvement determines the effectiveness of the scientist and the validity of the knowledge he attains. The needs to know and to understand, the cognitive needs, from which science originates are considered by Dr. Maslow to be "instinct-like and therefore defining characteristics of humanhood." But the cognitive activities arising from the needs may be instigated either by fear and anxiety or by anxiety-free interest in the nature of reality. The first type is marked by cognitive pathologies: curiosity as a defense against the fearsomeness of the unknown; the compulsive need for certainty; inability to tolerate ambiguity; the need to conform; overrespect, as well as underrespect, for authority. Many more examples surely come to mind. The second type, free from fear, enables the scientist to be wholly absorbed in the fascinating reality of the world and to gain the fullest knowledge of it.

Scientists, however, like all human beings, act from a mixture of motives, of which anxiety and anxiety-free interest may both be components. Since knower and known are not separate and unrelated, "honest knowing of oneself is logically and psychologically prior to knowing the extrapsychic world."

This does not appear to be a very startling statement. Besides, Socrates said it first and, after him, Alexander Pope.

"Know then thyself, presume not
God to scan;
The proper study of mankind is
man."

But according to the traditional view, this advice is applicable to all men except scientists when they are doing science, for then they do not have selves, any competent observer serving as well as another, all seeing the same truths. Furthermore, neither mankind nor man is involved in this conception of science. The universe is studied for the same reason that the inarticulate mountain climber climbs the mountain: because it is there. Refusing to consider scientists as anything but human beings, Dr. Maslow does not hesitate to criticize motives and choices. "Scientists who need neatness and simplicity generally have enough sense to stay away from the humanistic and personal problems of human nature . . . this can be a way of avoiding the tough problems." Of the application of the methods of classical science to these tough problems, he says, "I suppose it is tempting, if the only tool you have is a hammer, to treat everything as if it were a nail."

A Humanistic Science

Dr. Maslow offers a humanistic science in contrast to the classical mechanistic science, based on experiential knowledge rather than on spectator knowledge. This is the second major theme. The orthodox scientist looks at something outside himself, not human, independent of him. He is not a participant observer, but a spectator. He can, and for the sake of accuracy in his observations, he should be detached, disinterested, neutral. But this is not an effective way of gaining knowledge about one person or about people in general or about human societies and cultures. Direct experiencing yields this kind of knowledge, which Dr. Maslow denotes by various names: I-Thou knowledge, after Martin Buber's concept; knowledge from within; Being-Cognition; fusion knowledge; identification knowledge. Dr. Maslow finally calls it interpersonal-relationship knowledge and suggests it as a paradigm for science. It arises from a Taoistic approach to learning about nature, consisting essentially of an open receptivity, wholly accepting, self-effacing. It is perceiving and absorbing without interfering, classifying, evaluating, or even free-associating. For some people, listening to music or looking at art comes closest to this kind of fruitful receptivity. It is clearly not easy to achieve, but then neither are the attitudes and skills required for the practice of traditional science—or for writing poetry, painting, playing or composing music. It is surprising that Dr. Maslow does not make more of this analogy with art, that suggests itself so readily.

It should not be thought that Dr. Maslow wishes to replace a "mistaken" view by a "correct" view, or mechan-

(Continued on page 13)

Joseph Mindel of M.I.T.'s Lincoln Laboratory will write monthly in Technology Review; he served for 26 years as chairman of the Department of Science, New York City high schools.

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Puzzle Corner

By Allan J. Gottlieb, '67

After a year's experience in *Tech Engineering News,* Puzzle Corner now also appears in Technology Review. So I have the honor and privilege (or so I was told) to see that there are several puzzles in each issue. Being a basically lazy individual, I would prefer to be deluged with puzzle suggestions. If necessary, however, I have a supply of my own.

I will print solutions in the second issue following the one in which the problems are published, and I'll print the name(s) of those who send correct solutions (sorry, no partial credit). To snow your family and make me feel the warmth of popularity, send in your solutions . . . and your problems, too. Reach me at Box 4380, Baker House, M.I.T., or if for some reason you feel an urgent need to communicate, try Institute extension 3161 (M.I.T.'s number is 617-864-6900).

The problems vary in difficulty. Some will be so easy even I can do them. Others will be more challenging: and occasionally, a problem will appear for which I have, as yet, no solution. The latter will be noted by a diamond (♦).

Here We Go

1—The problem:

$$\begin{array}{r} \text{W A S M A R C H} \\ +\quad \text{T H E B E S T} \\ \hline \text{C A N D I D A T E} \end{array}$$

And the product H•E•R•B•I•D equals zero.

This problem was first run in *Tech Engineering News* last spring, and I am informed that there are several trivial solutions; for example, all the characters may be zeros. To force a unique solution, I now add the condition that M, which does not equal zero, equals C•W.

2—♦ I have received the following letter:

Dear Mr. Gottlieb:

We have discovered (we think) an interesting chess problem which you and your readers may find amusing. It is moderately difficult, but there *is* a solution. Given the eight rear-rank pieces, place them on a board in such a way that they cover every square (i.e., any piece of the opposing color placed anywhere on the board may be taken in one move). The two bishops may not be of the same color.

Lawrence Ribbecke, '69
Mitchell Wand, '69

I am not sure whether one must protect his own pieces. The reader may attempt to solve the problem either way.

3—Simplify the following (a handbook will be helpful and is permitted):

$$\int_1^{\lim_{z\to\infty}\left(1+\frac{1}{Z}\right)^z} \left(\frac{\pi}{2} - \tan^{-1}x + \frac{\sum_{k=1}^{\infty}(-1)^{k+1}}{(2k+1)x^{2k+1}}\right) dx$$

$$-\frac{1}{2}(e^{i\alpha} - e^{-i\alpha})^2 + \cos 2\alpha$$

$$-\sum_{n=o}^{\infty} \frac{\cosh y\sqrt{1-\tanh^2 y}}{\left(\sum_{j=o}^{\infty}\frac{\cosh\gamma\sqrt{1-\tanh^2\gamma}}{2^j}\right)^n}$$

4—What nonzero five-digit number has its digits reversed when multiplied by 4?

5—Prove the well-known theorem in geometry that if two angle bisectors of a triangle are equal, then the triangle is isosceles.

The Speed Department

6—If a chicken and a half lays an egg and a half in a day and a half, how many eggs do six chickens lay in six days?

7—The following is false:

VII = I

Move one line to form a true equality.

Solutions and Discussion

Here are two earlier problems, now mostly solved, from last April's *Tech Engineering News*:

22—Let (a_α) be a non-empty set of reals. Define the distance set of (a_α) to be $(b \text{ s.t. } b = a_\beta - a_\gamma)$. What can be said about distance sets (measure, open, closed, connected, etc.)? In particular, what are some necessary and/or sufficient conditions for a set A to be the distance set of any set? For example, A must contain 0 and A cannot be (0,1,3).

Despite the fact that I offered a free subscription to *Tech Engineering News* for the best solution to this problem, I did not receive any solutions. Now the offer is extended, and the prize becomes the reader's choice of free subscriptions to *TEN* or Technology Review.

25—Daniel S. Drucker, '67, wants to know the last three digits of 7^{9999}. Richard Haberman, '67, solved this one by constantly reducing mod 1000; his solution is as follows:

$7^0 = 1$
$7^1 = 7$
$7^2 = 49$
$7^3 = 343$
$7^4 = 2401 = 401$
$7^5 = 16807 = 807$
$\therefore 7^4 - 7^0 = 400$
$7^4(7^4 - 7^0) = 400$ since $7^4 = 401$
$7^8 = 7^4 + 400 = 801$
$\therefore 7^{12} = 201$
$\therefore 7^{16} = 601$
$7^{20} = 1$
$\therefore$ repeats every 20 — find mod 20
$20\overline{)9999}$ mod 19
(*i.e., 9999 ≡ 19 (mod 20) — ed.*)
$7^3 = 343$ $7^3(7^4-7^0) = 343(400) = 200$
$\therefore 7^7 = 543$
$\therefore 7^{11} = 743$
$7^{15} = 943$
$7^{19} = 143$ **Answer: 143**

The solution given by the proposer is so completely different that I shall print it as well:

$$7^{9999} = \frac{7^{4\cdot2500}}{7} = \frac{(2400+1)^{2500}}{7}$$

then, using the binomial expansion and sufficient gymnastics,

$$= \frac{10^3(k+1)}{7} \text{ for suitable integer } k$$

$$= \frac{10^3(k-1)+1001}{7} = \frac{10^3(k-1)}{7} + 143$$

7 divides $(k-1)$, so $\frac{10^3(k-1)}{7}$ is a multiple of 10^3.

$\therefore$ the last three digits are 143.

Allan J. Gottlieb is an M.I.T. senior majoring in mathematics; his home is in Elmont, N.Y. Puzzle Corner has attained wide popularity in *Tech Engineering News.*

Review on Books

(Continued from page 9)

istic by humanistic science. Spectator knowledge is needed as well as experiential knowledge, controlled experiments as well as noninterfering receptivity, abstraction and theorizing as well as the concreteness of direct experience, reduction of experience to laws, formulas and models together with the comprehensive perception of whole experiences, mechanistic as well as humanistic science. Dr. Maslow's conception of science includes all these aspects of experience and knowledge, not as separate, immiscible categories, but all integrated with each other.

The enlargement of the traditional scientific world to include the world of subjective experiences introduces into the scientific canon new means of ac-

(Concluded on page 86)

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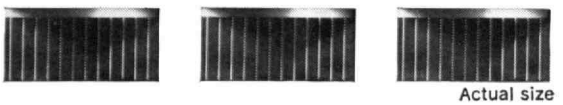

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Size and Diversity

By Corbin Gwaltney

In the booming, building U.S. economy, few if any segments are booming or building more spectacularly than the one labeled "higher education." Higher education, in this context, means the nation's colleges and universities—which, with some notable exceptions, are undergoing their greatest growth in history.

Higher education in the United States comprises a vast and varied collection of institutions—2,207 at latest count. They have a diversity that defies statistical description. Some are colossi in every sense, with large and expensive physical plants, world-wide operations, enrollments in the tens of thousands, investment portfolios worth tens (and sometimes hundreds) of millions. Others are small; and some are hard-put to make ends meet.

The diversity in American higher education extends to the ways in which the country's colleges and universities are financed and governed. Some 790 of them are publicly controlled—436 by states, 354 by cities or other political subdivisions. The mainstay of their financing is state or local tax money, made available to them through annual or biennial appropriations. The remaining 1,417 colleges and universities are "private"; 524 of them independent of a church, 484 Protestant, 381 Roman Catholic, and 28 connected with other religious denominations. The financing of the "private" institutions often has a patchwork quality, with funds coming from such sources as tuition, gifts from alumni and other friends, grants from corporations, income on endowments, and—not infrequently—the government.

The fact that many "private" institutions of higher education depend heavily on public funds, particularly those distributed by the Federal government, illustrates the anomalies in nomenclature and procedures that characterize the nation's higher-education establishment. Very little about the classification of America's colleges and universities is statistically clean-cut. Consider, for example, that several of the largest private endowments in U.S. higher education are held by public institutions. Or that many tax-supported colleges and universities depend to a surprising extent upon gifts from private donors. Or that substantial numbers of public institutions have been raising their tuition fees, in recent years, simply because the money they receive from their states and municipalities isn't enough to pay all costs of education.

As for the booming nature of higher education's current operations, almost any yardstick proves it. Take enrollments, for example. This fall, estimates the Federal government, six million students will be taking work creditable toward a bachelor's or higher degree—a number that is more than 9 per cent above the 5.5 million of 1965. Even the freshman class, which might have been expected to shrink this fall due to a dip in America's population of 18-year-olds, is slightly larger: 1,450,000, compared with 1,442,000 twelve months ago.

Inevitably, the enrollment boom is reflected in other phases of the colleges' and universities' operations. Faculty members, for instance, now number 466,000—an 8.6 per cent increase over last year. And college and university expenditures this year will total $16.8 billion—$1.6 billion more than in the preceding year.

And there is more, much more, to come. By 1970, according to the best estimates, there will be 7.3 million students enrolled in degree-credit courses. Five years later, the total enrollment in such courses may reach 9 million.

New Roles and Relationships

With such growth, not unexpectedly, have come problems. For the colleges and universities, which once were popularly regarded (and may even have regarded themselves) as sequestered from society's mainstream, mere growth has been complicated by other, concurrent developments.

Not the least of these complications has been the colleges' assumption—or, in some instances, the foisting upon them—of new roles running from community cultural center to research-plant entrepreneur. In recent years Americans by the million have come to realize how dependent they are, for cultural sustenance as well as for scientific competence, upon resources which the colleges and universities offer in greater abundance than any other agency. The result: higher education and its institutions have moved from a position on the peaceful outskirts of society to one in the seething center.

This movement has had an effect upon the universities' relationships with all segments of society, none more important than the Federal government. Beginning on a substantial scale in World War II, when the government called upon university scientists to help develop many kinds of sophisticated weapons, the Washington-campus relationship has grown to a magnitude which, in government-financed research alone, represents an expenditure of more than $1 billion a year. In some leading campus centers of scientific research, the Federal share of the cost of running the principal science departments amounts to well over 50 per cent.

And research money is only the beginning. Now, as the result of a series of acts of Congress in the past two years, money is flowing from Washington to the campuses for classroom buildings, scholarships and fellowships, libraries, loans to students, and numerous other purposes. The dependence upon funds from the Federal government is great, these days, at both public and private institutions.

State support of colleges and universities is booming, also. At this writing, 48 of the 50 states have appropriated tax funds for their public institutions of higher education in 1966-1967: an unprecedented total of $3.3 billion. This is an incredible 41 per cent more than was appropriated two years ago.

An increasing realization of the colleges' and universities' importance to the nation's economy evidently lies behind the growth of another kind of financial support: that which institutions of higher education receive from corporations. And surely such a realization (not merely a lucky combination of old-school-tie sentimentality and national affluence) is largely responsible for the $244 million which 636 colleges and universities received from 1.9 million of their alumni in 1964-1965, the most recent year surveyed.

In fact, all forms of voluntary support of the country's institutions of higher learning have risen spectacularly in recent years. In academic 1964-1965, the latest year for which figures are complete, 1,064 colleges and universities received a record-breaking $1.556 *billion* in such support—a 36.6 per cent increase in two years.

No ivory-tower phenomena, these. Such manifestations of support for the nation's institutions of higher education demonstrate—more clearly than any other evidence—how the colleges and universities have achieved an extraordinary identification, in the people's minds, with the common good. This, for institutions which not long ago were popularly grouped with country clubs, debating societies, and other organizations remote from the realities of life, is a remarkable achievement indeed.

Corbin Gwaltney, former editor of the *Johns Hopkins Magazine*, will write regularly for Technology Review from Editorial Projects for Education, Inc.

Review on Science

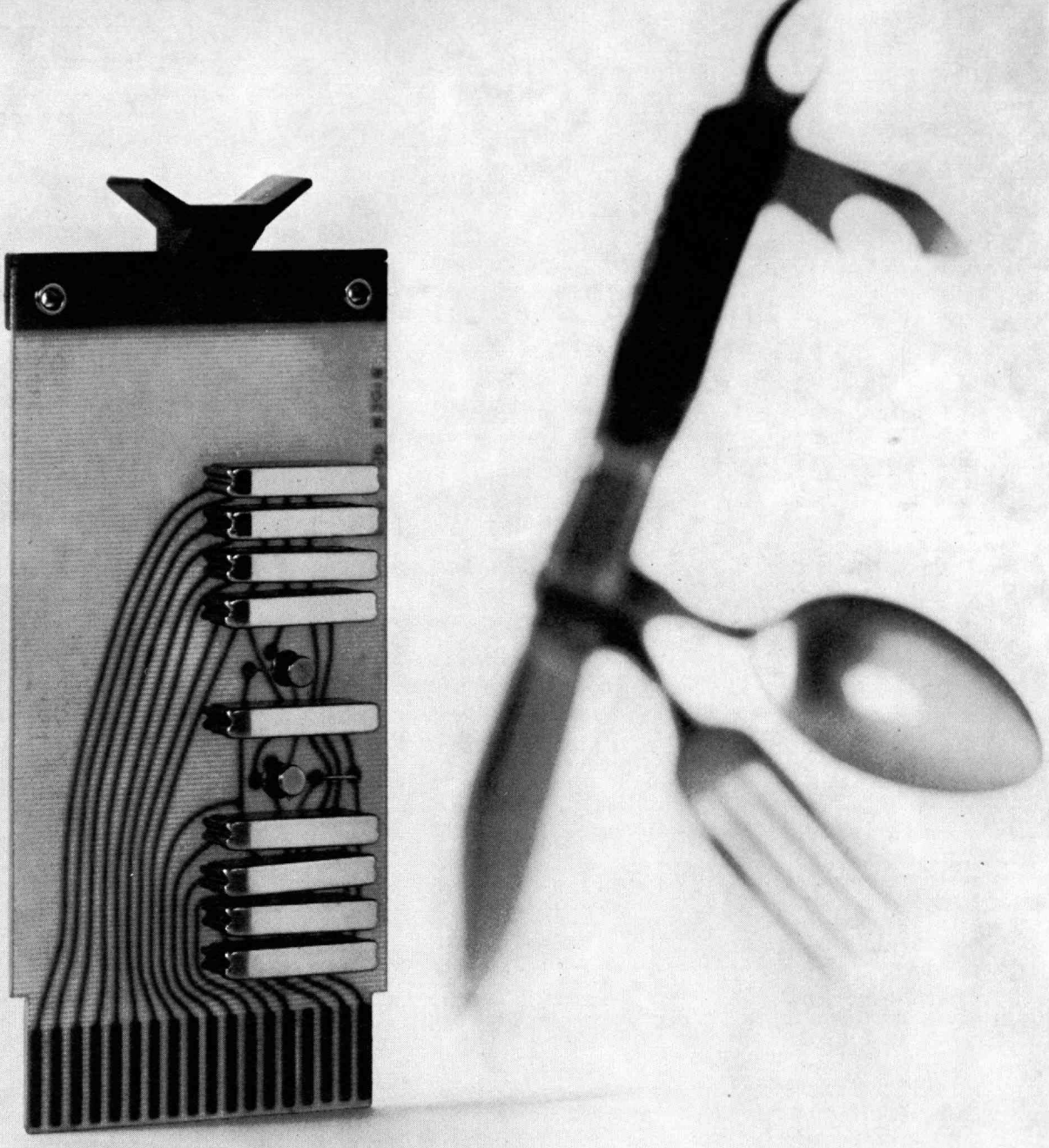
(Concluded from page 5)

While the Mohole controversy was under way, four of the leading oceanographic institutions banded together to carry out a continuing drilling program —Woods Hole Oceanographic Institution, Scripps Institution of Oceanography, Columbia University's Lamont Laboratory, and the University of Miami's Institute of Marine Science. They call the program JOIDES (Joint Oceanographic Institutions' Deep Earth Sampling Program). They work with funds granted by NSF and they plan and manage the program themselves. JOIDES teams have already drilled a number of holes in geologically interesting places. One of these, drilled in 145 feet of water off Florida, is 1,056 feet deep. That's deeper than any shaft the Mohole program drilled. NSF now has granted $5.4 million over two years for a JOIDES program to drill in water 18,000 to 20,000 feet deep.

But scientists need skilled argument as well as wise management. The main reason the Senate lacked the interest to make a fight over Mohole may well have been the sorry performance Mohole supporters put on for the Senate Independent Offices Appropriations Subcommittee.

Some supporters trotted out arguments as hackneyed as the threat of Russian competition and as far out as suggesting the Mohole platform could be used to raise disabled submarines. Senator Gordon L. Allott of Colorado commented, "We have been given a snow job that is almost unbelievable." Senator Warren G. Magnuson of Washington (chairman) noted, "We don't seem to receive much help from the scientific community on the question of priorities."

If basic research is to hold its own in this period of tightening resources, those who apply for funds had better get their priorities straight. The old *laissez-faire* approach to basic research funding is down the Mohole.



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CHARTER

The University of the Future

The universities are in the forefront of society, and among them M.I.T. has a special role as maker of the future

By Howard W. Johnson

It is altogether fitting that periodically we take the time to reaffirm our reliance on the main principles of our free educational endeavor. It is especially fitting that such a reaffirmation should take place in this old city of Cambridge where the endless stream of history flows around us almost as tangibly as the Charles. For it was here, three centuries ago and more, that there began in Cambridge at Harvard the American tradition of dedicated scholarship and consistent high standards in education. It was here two centuries ago, along the Charles, that there flared the first sparks of the freedom that is still ours, not only to enjoy but to deserve. A few hundred yards behind us here in Rockwell Cage lie still the remnants of the fort that Washington and his ragged army built in 1775 as part of the line defense against the British occupiers of Boston. The walls of that old fort stand proudly today in constant testimony to the successful outcome of that struggle. The revolution of free men that began then has never stopped, and full access to education, on merit, has been one of its main strengths from the beginning.

One hundred years ago, with the founding of M.I.T., began a new revolution in education, based on the worth of useful knowledge and committed to the full development of a young and vigorous country. That revolution, too, has never stopped and we propose to continue it.

Fifty years ago, M.I.T. crossed the Charles to Cambridge, and from its halls have continued to come the men who leave a major impression on a technological world.

Yes, Cambridge is an appropriate place to measure the distance that has been covered by advanced education in this country, to appraise the quality of its performance, and to mark the principles which have made it possible.

PHOTO: OWEN D. FRANKEN, '68
The climactic moment: President Howard W. Johnson holds the Charter of M.I.T. and receives the hand of James R. Killian, Jr., '26, Chairman of the Corporation, in the inauguration ceremonies on October 7 which *The Tech* described as "colorful," "dignified," heavy-scented with history," and "resplendent with the grandeur of the academic tradition."

Now we reaffirm the need for the fundamental contribution of the university in the advancement of society and the critical need for that contribution in the world today.

We reaffirm the need for the special role and responsibility of the independent private university within the higher educational system to provide a special leadership, a vigor and quickness in experiment for the development of ideas.

We reaffirm the vitality of the technological challenge for the universities, and especially for this one, in the continuing development of science and engineering that makes further physical advantage possible, and in the development of people to provide leadership in a technological society.

We reaffirm the words of Karl Compton that "the advent of modern science is the most important social event in all history," and that this powerful fact poses the problem of providing new paths for meeting humanity's need for an individualism in a world rich in the mass products of physical advantage. This human use of science is the imperative of our time if man is to understand his state and expand his potential on earth.

We reaffirm our belief in the concept that new ideas spring from the minds of the most talented people, and we must search out the most promising wherever they are to be found and give them opportunity for maximum performance. The nation is best served when we provide opportunity for education for all to the limit of their ability. But our thrust forward will depend on the performance of the best, not the average.

We reaffirm the importance of the close learning interdependence that should exist between teacher and student, and the vigorous interaction that this implies of ideas and positions, of the past and the present. We see no substitute for this confrontation if learning is to take place.

So we speak again of these propositions that characterize our educational system and that have special meaning for M.I.T.

William Barton Rogers' plan for "the improvement of industry and agriculture by a knowledge of its connections with truths and laws" is as sound in principle today as it ever was; and his phrase, "the dignity of useful work," is as rich in meaning for both individuals and society as ever. But we look now at a newer set of situations to be confronted by those basic propositions: a new world with larger concentrations of people, greater pressures produced by higher expectations, faster change rates produced by the extraordinary advances of science, and more complex human interactions resulting from a network of improved communications which threatens to defy old concepts of distance and time. These fundamental changes in our societal structure, these sharp etchings of change caused by the acids of progress, alter the ways in which our principles are now secured. As Alfred North Whitehead has said, "The art

PHOTOS: WHITESTONE

The festivities of the inauguration began at Philharmonic Hall in New York on October 5, when more than 2,500 M.I.T. and Harvard alumni attended a reception and concert by the Festival Orchestra of New York in honor of President and Mrs. Howard W. Johnson, who were introduced during the intermission (above).

The final event of the week was an inauguration party for undergraduates in the Student Center and Du Pont Center gymnasium. Some 2,000 students and their "dates" arrived, and it may have been the largest single gathering of undergraduates in the history of M.I.T.

PHOTO: STEPHEN LEE, '70

PHOTO: RICHARD M. KOOLISH, '68

of free society consists first in the maintenance of a symbolic code, and secondly in the fearlessness of revision. Those societies which cannot combine reverence to their symbols with freedom of revision must ultimately decay." M.I.T. has always honored its symbols, and yet it has always been able to revise. And this recognition of the need for change and the existence here of the power to achieve it has kept this institution a force for progress throughout its history. The great works of Compton, Bush, Killian, Stratton, and all the others testify to this principle.

It is a hard fact of our time, in this last third of the Twentieth Century, that relentless change has forced the universities into the forefront of society, from a supporting role to a leadership role. The demands upon the university of today to meet the problems of the new world alter the ways in which it performs to fill its basic functions. Historically, society has given other institutions within it opportunities for major leadership. Now, it is clear that society will turn more than ever to the university for help in raising the standards of life, for providing new ideas for solving problems, and, most of all, for providing new kinds of leaders. The historic roles of the university—to educate the youth, to preserve knowledge, and to create new knowledge—remain the same; but the emphasis on them becomes greater in a more demanding society, and the greatest emphasis will be on developing leadership.

The university of tomorrow cannot pretend to ignore these vigorous currents of change around it. It cannot produce students who, in Kafka's words, are like "couriers who hurry about the world, shouting to each other messages that have become meaningless." The university, now more than ever, must be concerned with educating men who have both the understanding of science and of society in a modern world and who have the character and taste to represent the highest standard.

How can this best be done? There are no simple answers, no easy propositions. For each institution, faced with special demands and special problems, the need will be different. But I see some basic characteristics of M.I.T. which now emerge in newer translation as we set our course for these next years.

The first outstanding characteristic of M.I.T. is its direct capacity to act, to respond to problems and to solve them in effective, powerful ways. M.I.T.'s record is perhaps unique in this regard. This is modern engineering at its very best. Bright men with a bold approach to a large complex problem affecting society's interest find here more support and opportunity to demonstrate effects quickly than in any other place I know. The vitality of this horizon-seeking force—this powerful response to problems—will, I hope, never change at M.I.T. The cost to the nation would be too great, and the loss of capacity in developing gifted individuals would be no less a disaster.

But there is an important consideration which will in-

creasingly affect M.I.T.'s response to problems. I believe that the general range of problems attacked by M.I.T. in the future will shift more and more to those that understandably affect the ways in which our society lives, that this institution will increasingly exert its power toward the problems of human significance. It seems clear to me that we have reached the stage of population levels and aspirations when the happy and productive ordering of our community lies in massive solutions to our problems in education, in urban living, in regional development, in commerce and industry, in transportation, in medicine, and, yes, in the peaceful conduct of nations. And the effective solutions to these problems become of first priority to the nation. As M.I.T.'s Physical Science Study and other curriculum improvements have shown in education, and the engineering systems approaches have potentially demonstrated in other fields, the university can make a powerful contribution toward the solution of these problems, and I must add that these are the problems which attract the best and most vigorous effort of our socially conscious youth. The attraction and appeal of this kind of bold engineering and social science and management to our best young people is not dead. It has just come alive.

The second outstanding characteristic of M.I.T. is that this is a university in which the bone structure is science and the application of science. Science is fundamental to M.I.T.'s past, and, I believe, to its future. The study of science has outlined the educational pattern for all of our students, and the pursuit of scientific research here has been the drumbeat to which our Faculty and, indeed, the world listens.

Let me comment on each of these two parts of the whole. In teaching, we believe that the student broadly learns from the rigor of interpretation, comparison, and discovery that is the core of the approach of science and engineering. It is difficult to see how the completely educated man of the future could be without this understanding of the physical and biological world, no matter what his later professional emphasis.

Research in science deserves the special concern of all of us. To strengthen our basic fields, to state again the need to follow the paths of science where discovery leads without faltering, these are propositions of the highest priority. One consideration, not so obvious, however, is the danger that M.I.T.'s very power to mobilize talent in urgent response to problems runs the risk of reducing our ability to nurture the quiet patterns of the laboratory and the study with the purpose of developing basic advance in the sciences. It is difficult to remain in the firehouse when the whole town has rushed off to fight the fire. But I believe we must strengthen this second pattern of individual concentration. It is true that the peace and serenity of this pursuit at M.I.T. will, perhaps, always be that of the eye of the hurricane; but I believe that strengthening the path of scholarly life is central to the strength of the institution itself. This approach to major support of science and engineering will require a dedicated effort and, most of all, an attitude change on the part of all of us, and I predict we will succeed.

I have spoken of our intention to press both for effective engineering application and strong basic science because, of course, one is incomplete without the other. M.I.T. will make its contribution by continuing to achieve a dynamic equilibrium of science and application.

I turn now to another set of characteristics of M.I.T., just as vital and just as valid to our future.

They relate to the total education of the men and women who emerge from this institution in the future. We hold that it would be inadequate for the basic education of the M.I.T. man and woman to stop at science and engineering. We hold that both frameworks, science and the humanities, are complex requisites to the education of the man who is to occupy the leadership responsibility in tomorrow's world.

The threat implied in the concept of the separateness of the two cultures lies in the narrow arrogance of power based on assumptions of a pre-eminence of a specialty. This narrow specialization is what we propose to avoid —a specialization, I might add, found as easily in medical doctors, businessmen, and politicians as in scientists and humanists. My point is that the future will demand of M.I.T. a great deal more than that it simply bridge the supposed schism between two cultures, where the not-so-well-rounded scientist can be as ignorant of Shakespeare as the humanist is of the second law of thermodynamics. We shall have to provide the true generalist capable of dealing with the great problems cutting across every area of our lives.

M.I.T. can be proud of its revolution in broadening the base of education in the humanities as well as in science, but what we have done is not enough. We must continue to strengthen the power of the confluence of science and the arts. We have found productive avenues for the strengthening of many areas of the arts, but we must find more ways of strengthening the interaction between these two parts which are, indeed, not separate at all.

For me, the study of history, presenting the understanding of the past, the perspective of men's heroism and folly, his achievements and disasters, his hopes and fears, helps to explain life and develop a deep-rooted concern for humanity. I suppose that as Trevelyan has said, "the poetry of history lies in the miraculous fact that once on this familiar spot of ground walked other men and women . . . thinking their own thoughts, swayed by their own passions, but now all gone, one generation vanishing after another, gone as utterly as we ourselves shall shortly be gone."

Now I want to turn away from this footnote on subject matter in the curriculum to a matter closely related to it—the environment within which our education takes

(*Concluded on page 24*)

President Johnson's induction was followed by a standing ovation from the inauguration audience of over 4,000 in Rockwell Cage (above). Among them (shown, left, awaiting the ceremonies) were Mrs. Johnson and Stephen, Bruce, and Laura.

Inauguration Day began (top, opposite) with the traditional academic procession, led by Professor Charles P. Kindleberger as chairman of the Faculty; it was enlivened by pickets claiming support of the M.I.T. chapter of Students for a Democratic Society and the M.I.T. Civil Rights Committee, seeking M.I.T.'s help in a fight against the Inner Belt highway through Cambridge, which has become a lively campaign issue in this election year.

PHOTO: ARTHUR A. KALOTKIN, '68

At the luncheon for delegates (center, opposite), Professor Carroll L. Wilson, '32, toasted M.I.T.'s new first family: "You will shape the future of this community and thereby influence the whole wide world which looks to M.I.T. for leadership."

Delegates from over 250 institutions and societies paid tribute to M.I.T. and President Johnson by attending the inauguration and afterwards a Kresge Foyer reception. Over 60 of them were university presidents, including J. Russell Beatty of Wentworth Institute (below, opposite, with Mrs. Beatty greeting President and Mrs. Johnson) and Friedrich Wilhelm Gundlach, Rector of the University of Berlin, who presented his institution's formal greetings.

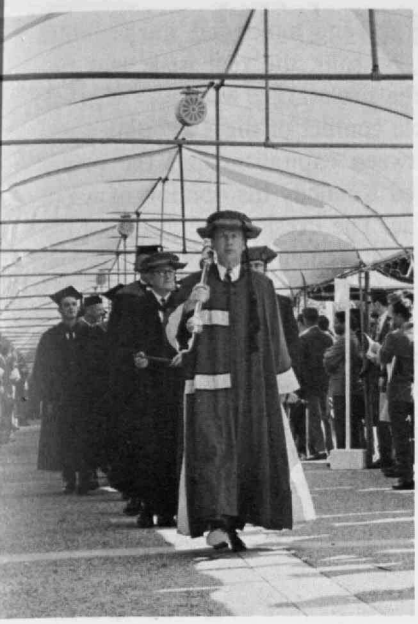


PHOTO: ARTHUR A. KALOTKIN, '68

PHOTO: ARTHUR A. KALOTKIN, '68

(*Concluded from page 21*)

place. There is a tendency for the pressures of the older format of M.I.T. to produce a physical environment that is efficient in the short run, perhaps, but inefficient in the long and less interesting than it might be. Music, architecture, and painting by their nature are equipped to impose form and meaning on the increasing complexities of human experiences, including those of science. Should we deprive ourselves by excluding a concern for these elements from our over-all environment? I don't think we can. If we look for human satisfaction and the uplift of the spirit, then the pattern of living of our students, the beauty of the surroundings and the variability of our converse are important, and we propose to press for major improvement.

I come now to the final characteristic of M.I.T. and surely its most important—our students, their quality, their motivation, and their outlook. For 100 years the men who have emerged from M.I.T. have become part of that moving parade that has made of this institution a great historical force. The present generation of students will surely meet that standard. M.I.T. is a relatively small institution in size, relatively large in its influence on society. Our emphasis continues to lie in the quality on which this nation depends for advancement, rather than on great numbers. The men and women who emerge from M.I.T. in the future will have an increasing advantage, a richer breadth, as well as M.I.T.'s characteristic ability to deal in depth. I believe that the university man today has a special requirement to perform effectively for society. For it is performance that is the final standard of a man's worth. He will be concerned with service to society, service in the cause of society, and the well-being of his fellow man. He will have the ability to appreciate the whole, to compose confidence with a sense of the beauty of life and the tragedy. He will carry a deep-seated sense of responsibility. He will have an enjoyment of life that will set him apart as a member of that select band who through the years have known the pleasure of intellectual advance and solid social accomplishment, who have high ideals and yet no illusions about what remains to be done or the difficulty of dealing with an ambiguous world. He will have learned, as Justice Holmes has put it, "that life is a profound and passionate thing." And in seeking to serve his fellow man, he will come closer to understanding man's purpose on this earth.

Arthur Schlesinger in his book *A Thousand Days* reports a brief conversation between John Kennedy and André Malraux in which Malraux describes the ostensible issue of the Nineteenth Century in Europe as being between the monarchy on one hand and the republic on the other, whereas, he said, the real issue was between capitalism and the proletariat. Malraux went on to say that the ostensible conflict of the Twentieth Century is the conflict between capitalism and the proletariat, and then he asked Kennedy his opinion of what, indeed, was the real issue. The President replied that the real problem of our century is the management of industrial society. I would propose that central to the effective solution of that problem, in all of its complex facets, is the issue of whether or not the universities of our time will turn out men who know science in the broad context of society and who, understanding life and loving liberty, can provide a responsible leadership in education, in government, and in industry, in a world dominated by technology.

This, then, is the new call to the university of the future. As the Institute, founded by William Barton Rogers proceeds in its second century, we call for a renewal of our historic plan. The elements of this plan draw from the basic fiber, the very character of this institution: our power to act, our foundation in science, our commitment to research, our determination to build the humanities and the arts, our emphasis on the importance of the environment and, above all, our expectations for the performance of our students. These basic propositions make M.I.T. a university that never looks back as a conserver of the past but always forward as a maker of the future.

A difficult task lies ahead. Yet the pains and dilemmas that we shall encounter in achieving this plan are far from the problems of despair. Rather, they represent opportunities for reaching an end which no other university of our time has reached. We may be on the verge of bridging traditional separate cultures. But more importantly, as we do so we are engaged, I believe, in the process of confronting a whole system of interrelated problems of our modern society. It is, I believe, the role of the university of the future to apply this all-out concern for issues of human significance, to keep in balance a dynamic system of variables while at the same time pressing for progress toward our final goal—the goal of total and continuous education for the whole man.

I believe M.I.T.'s record in this process, over the coming years, will illumine our society in significant ways both directly through the men and women who come from the Institute and indirectly through the example M.I.T. sets for others. In this great cause, I join my colleagues, and, conscious of the valiant work of those who have gone before us, and of the hopes of those to come, I say, let us go on.

PHOTO: ARTHUR A. KALOTKIN, '68

General Education: Toward Man's Aspirations

In today's world of pressure and change, can education bring together man's abilities and purpose?

By Roy Lamson

What periods of human history have not been periods of pressure and change? Today both the pressures and the opportunities also are greater than ever before. For one thing, man has at his disposal the greatest power he has ever known. Holders of this power are split into two vast political camps. New nations are finding their way and testing alignments.

We are under pressure. We are in change. We need also the wisdom which both nature and learning can provide.

In education now we face the pressures of dealing with increased numbers who are entitled to enjoy its benefits. We face also the driving force of new knowledge with its own by-product of increased specialization. We face rapid technological change with consequent demands on education to keep pace. For education must, in its larger aspects, serve as the expositor and the interpreter of change and of society. Throughout our country we are facing the impact of social and economic development on attitudes towards civil rights, poverty, and towards education itself.

In this generation most of us must be experts in some field to earn a living. No one, of course, can be an expert in everything. We must trust to experts in our daily lives and activities. We need the sagacity to "distinguish the expert from the quack, and the better from the less good expert. Here is a basic but by no means unique contribution of general education, and for this discussion I mean *general* education as against *special* education. In the broadest sense, general education is very practical. It should help man develop his taste, his frames of reference; it should help him increase his awareness of the world and of himself. I do not mean for a moment to decry *special* education, vocational and professional education. Both kinds implement our culture.

In spite of some anti-intellectual poses and biases, we are an education-oriented nation. In our own generation we have seen the growth of respect for education and for intellectual leadership in private and public life. We are at the same time a nation interested in making things work; we develop systems with skill. One result is the successful development of industry, of information processing, of communications, of national defense. Our achievement in educational systems, though important and vital, lags. It is still in a beginning state, but a beginning state of revolution which will see a significant development of quality in the 1960's and 1970's.

The picture of elementary and secondary education in the U.S. today is a mixed one. A great deal of the national effort must be now and for the future the bolstering up of deprived systems and hence of deprived students and deprived teachers. Learning in an atmosphere of poverty and tension is not an easy thing for any young person. Public schools must do more than increase their educational quality. They must fulfill their promise as institutions for realizing the goals of social equality.

In communities of our country where citizens, school officials, committees, and teachers have come together to develop and improve quality, there have been remarkable results. One feature of this development, which comes into the discussion of both secondary and college education, is "advanced placement." Increasingly, though slowly, in the last five years, students with stepped-up or advanced programs of instruction in their last years in both public and independent secondary schools are able to anticipate in whole or part the average freshman year of universities and colleges of high standard. What the full impact of this is or will be on the structure of college curricula we do not yet know. However, one educator has warned that the pressure of advanced work of the secondary school and the specialization in the last years of college in preparation for graduate school are "thinning out and flattening the college's once distinctive curriculum." All this activity may lead to the serious re-examination of our traditional four-year college or university "package."

Overall, our national effort does underline our big dual problem—the necessity of education for everyone and of bringing substandard systems up to acceptance and at the same time of providing the best opportunities for the able student to move ahead, free of Procrustean limits of fixed systems both in content and in pace.

For the students (and for the families) who seriously view college or university as a necessary and desirable step toward a successful life in America, the ways and content of general education of 25 years ago do not apply. The student has more to learn; he has more competition in numbers and, perhaps, in quality. He may, unfortunately, have less good teachers. Yet revolutions in the curriculum and the teaching of science, social science and, in part, humanities have fired the minds and the lives of many students and teachers.

The problems for students racing for admission to

college seem to be worse rather than better. The pressure for admission has forced many students to restrict their activities outside the classroom, to become early grinds; and the same pressures have driven many schools to think that their only function is to get their students into college. As a result, some students of talent, though not precisely the talent generally demanded, may not go to college. Nevertheless, several universities and colleges are experimenting with admission of what appear to be talented students who don't exactly fit the standard patterns. (Williams College, for example, is admitting approximately 10 per cent of its freshman class under such a policy, which will be studied for 10 years.)

Much as I sympathize with the family and the student faced with the pressure of college admission standards, I am more truly concerned that thousands of students, intellectually qualified for further study, do not go to college and settle for lives and activity below their abilities. Many have needed sound advice in moments of decision. The ability to counsel is frequently lacking in the family; overworked or uninspired teachers and counselors cannot do the needed job of steering many good minds forward. Early marriage is often a factor, too; and many, prematurely eager to shake off the shackles of the classroom, give up too soon.

Nevertheless, for the high school student who, with good family support and the benefit of good teaching, succeeds in being chosen, better opportunities are ahead, far better than two or more decades ago. Not only have high school students competed well with independent school students, but they have pressed many of the élite colleges to revise their admission policies and to increase their offerings in scholarships. The result has been a good one, in my opinion, for the college itself, and for the students who ordinarily would not have attended an élite college.

The term, general education, applied to colleges and universities, has developed a more complex meaning in the last two decades. It involves philosophies of education, attitudes toward academic disciplines and interdisciplinary study, and professional interests.

Following World War II, colleges and universities began to look critically at themselves, to ask anew basic educational questions and to plan for revisions and changes in their curricula. Many faculty members, returning from war, saw the need to study man's problems and man more deeply, to test values, and to reassess traditional ways of thinking and teaching.

General Education in a Free Society (Harvard)

Seemingly oblivious to previous excellent efforts by Columbia University and the University of Chicago in general education, a committee, appointed by President James B. Conant of Harvard, made a study which gave a new impetus to the concerns of many educators, and consequently to general education, and serves as an example of the Mid-Twentieth Century view. General education, they said, was education to increase the import of those general ideas and aspirations which have been a deep moving force in the lives of men. Its aims were to provide sufficient educational backgrounds for citizens of a free nation. The report, published in book form as *General Education in a Free Society* (and known to educators as *The Redbook* aimed to produce an educational philosophy for American society. *The Redbook* proposed courses in general education in the humanities, the social sciences, and science and mathematics. Some of the proposals, expressed in titles of courses, were "great texts of literature," aimed at the "fullest understanding of the work read rather than of men or periods represented, craftsmanship, historic or literary development shown, or anything else." Some eight great books were suggested—a selection of Homer, one or two Greek tragedies, Plato, the Bible, Dante, Shakespeare, Milton, and Tolstoy. For philosophy, a difficult subject to place in general education terms, they suggested (though it was not mandatory) "the heritage of philosophy in our civilization," a tried and true and valuable course at Harvard for many years.

In science and mathematics the problem seemed more difficult, and out of the discussions came two courses in which the effort was to merge specific scientific study with classical literature on the subject, especially in biology.

The fundamental concern of general education, said *The Redbook,* is with what is the same throughout all *change*. It deals with the very process of change itself and the taking account of it.

Most of the general education courses which Harvard has taught since World War II have this concern clearly; some appear to be introductory courses or modified surveys. At their best, however, they do study the large implications of an art, a human activity, or a science, and they are not bound by the strictures of single discipline, although many are basically historical in method. At their best they are "problem oriented" and emphasize the connection between education and the individual concerns of students and human beings and citizens. They also offer a buffer to premature specialization for many students.

The Harvard program for general education has undergone changes and development, has met with attacks and rallying support, but it appears to be a going system which provides a base for Harvard undergraduate education. The contribution is a solid one, and has been a model in theory for other colleges and universities, mainly through the enthusiastic dissemination of Harvard trained teachers and administrators.

Reforming General Education (Columbia)

Another institution, Columbia University, some 20 years before Harvard's program, had introduced general education into its curriculum, though it never had "a doctrinal commitment (like Harvard and Chicago) to a single theory or substantive formula of educational philosophy." The Columbia method (as is that of Chicago) is to have all students take a common general

education course of important subject matter organized around a syllabus. The aim is presumably to share a common intellectual apperception, if not experiences. Columbia called them "The Humanities and Contemporary Civilization Courses," covering two years of study.

The Columbia system has come under attack from some of the faculty, and its demise (indeed the demise of all liberal or general education in the college and university) has been regretfully prophesied in a speech made three years ago by Jacques Barzun, Columbia's Provost. Specialization, he said, is transforming the colleges, at least in the best colleges and those attached to universities.

College courses, he argues, no longer have serious liberal content, but each repeats a professional intention. The student, he continues, is not addressed as a person or citizen, but only as that dreadful model of our age: the useful member of society clothed in qualifications and armed with licenses to practice.

"In short," said Dr. Barzun, "both teachers and students are responding to the spirit of the times. They are impatient with everything that is not directed at the development of talent into competence. . . . The meaning of this is plain: the liberal arts tradition is dead or dying . . . sooner or later the college as we know it will find that it has no proper place in the scheme of things . . . the trend seems to me so clear that to object would be like trying to sweep back the ocean. It would be foolish to refine or prolong a tradition which has run its course."

Dr. Barzun, although engaging and ironic, may be a bit too gloomy, but his despair does come from an awareness that the direction of our economy and the weight of government policy, in the coming decades may make even heavier demands than now for professional and technical personnel, perhaps at the expense of our general educational system and, in particular, the humanities.

Yet the struggle is not ended. A new book by Daniel Bell, *"The Reforming of General Education* (prepared for a renewal of the debate at Columbia University) is in one reviewer's words, a "brave determination to hold back this flood [of specialization]."

The same reviewer, however, looking at the history of American collegiate education, sees the flaw in Barzun's image of "dead or dying" general education.

"American education," writes Fred M. Hechinger of the New York *Times* (July 17, 1966), "runs through cycles and phases, not through definable lives terminated by death. The elective system in the last century was the liberator from a cohesive but obsolete curriculum. General education packaging later tried to prevent excessive fragmentation. Now the excitement of single-minded probing in depth is, for the moment, made irresistible to a great mass of students. In the end, the fragmentation must, of course, be halted again."

It seems to me that Barzun's gloomy feelings are answered here with a thoughtful but too fixed view of our educational "cycles" and future.

In many ways the development of the humanities and social sciences at M.I.T. make use of and resemble the trends of universities but with a constant sense of experiment and testing. The word which rings in our corridors is "relevance." The current problem is "to achieve the highest quality of relevance in the Humanities curriculum to the present experience and the future position of M.I.T. graduates in the life of their society," in the words of Professor Richard M. Douglas, Head of the Department of Humanities. This is a large order but by no means impossible.

The main effort is in the required course programs for freshmen and sophomores in humanities and social science and in the broadening of elective offerings in those and related fields.

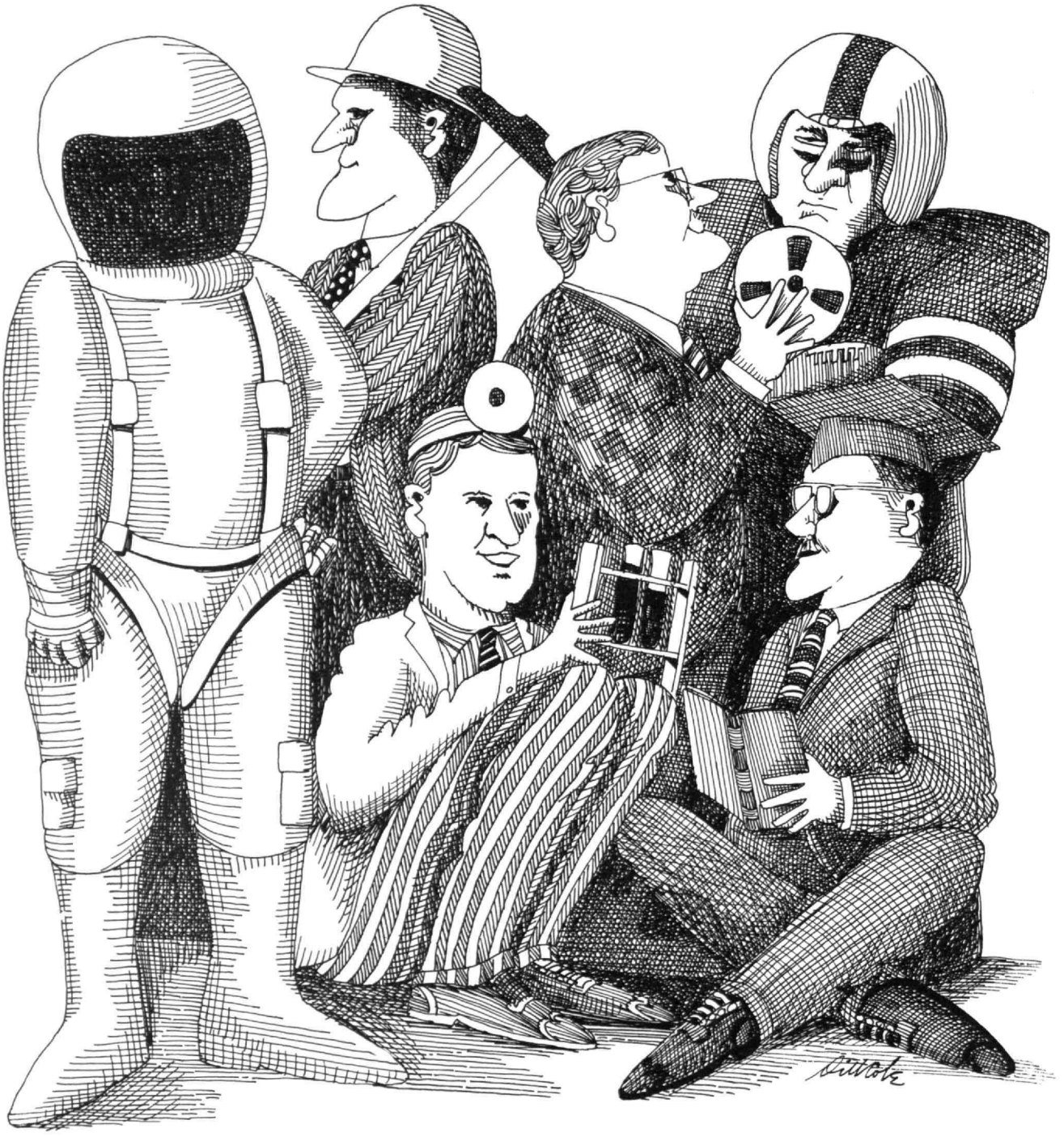
The freshman core course resembles general education courses at many major universities—a study of the Greek and Judaeo-Christian tradition through selected reading and discussion of literary, historical and philosophical monuments of the past. The relevance of the present is not sidetracked in the classroom, and beginning this fall new experimental sections of the core course will deal with the Past-Present relationship as seen in ancient and modern literature and ideas, and in a study of the city.

Until a few years ago the sophomore core was devoted either to a study of American ideas and values or to European ideas and values, but a gradual shift has been made to broad introductory courses in literature and in philosophy, in which the general education ideas are not lost, though occasionally slightly mislaid. Two of the several courses offered deal with Twentieth Century society and ideas. The Department, under a Carnegie Corporation Grant, is engaged in a three-year program of experimentation in the core curriculum of these first two years.

In the junior and senior years, in addition to the 10 fields from which the student may choose one for study (e.g., history, philosophy, literature, modern languages, music, economics, political science, psychology, visual arts) a series of subjects called Special Interdisciplinary Subjects are offered. Many of these could be well classified as general education. Among them are "Landmarks in Urban Evolution," "Biological Bases of Perception and Knowledge," "History and Psychoanalysis," "Intel-

(Continued on page 47)

Roy Lamson, former professor of English and dean of freshmen at Williams College and former historian of SHAPE (Supreme Headquarters Allied Powers Europe), joined the M.I.T. Faculty as professor of English in the Humanities Department in 1958. Since then he has also become director of Course XXI, M.I.T.'s unique undergraduate curriculum which combines study in the humanities with work in one field of science or engineering.



Professional Education: Toward a Way of Thought

To think the way a professional thinks
is an elusive and ill-defined concept
to which no one has a sure route

By Charles P. Kindleberger

The age of the amateur is dead. Professionalism rules —in the cockpit of spaceships, in football, and in learning. We have abandoned the British tradition of the amateur who was good at everything for that of the Grandes Ecoles, with rigorous scientific training leading to professional competence. "He's a pro," which used to be insulting in Britain, is now a compliment everywhere.

There is some room left for the amateur tradition—in politics. It is not good enough to duck the question of where the Inner Belt road should be located by saying that these are matters for resolution by experts. In economics, also, the number of distinct opinions on a given issue is frequently greater than one and sometimes approaches the number of experts. Social scientists resent that mere people feel entitled to have opinions on issues on which popular knowledge and capacity for theorizing are limited, but they have found no way to prevent it. And there is claimed to be scope for flair, inspiration and style—the hallmarks of the amateur—at the frontiers of science, when the ordinary professionals have carried the subject as far as they can. On the whole, however, the demand for professionals and professional education is greater than it has ever been.

Part of this demand is wasteful. An economic study some years ago claimed that there was not so much a shortage of scientists and engineers as very wasteful use of those on hand. Some part of the demand for Ph.D.'s today could perhaps be satisfied with M.S.'s, and some of the jobs seeking master's could be filled by bachelor's. During the long years of inadequate effective demand and considerable unemployment, we have tended to upgrade job requirements throughout the economy.

But the upgrading of the educational requirements of business and the professions goes well beyond snobbism and cultural lag. Knowledge has expanded. There is 100 times more information to be obtained today than in 1900, and it is estimated that by 2000 A.D. there will be 1000 times as much knowledge. Periodicals have risen in number from 45,000 in 1950 to 95,000 currently. Librarians blanch under the prospect of coping with the accelerating torrent of periodicals, books, monographs. A major problem in research is to find out what has been done by others so as to avoid rediscovering the same information.

The result is more professional education and more specialization. Eighty-five per cent of today's new doctors are trained as specialists rather than general practitioners. Lawyers are experts in taxation, trusts, domestic or international corporate law, or anti-trust. The man who used to be merely an economist is now a specialist in international economics or African trade. The one year of internship in medicine which was normal in 1945 has been extended to two, three or even four. Business recruits directly from the universities but increasingly from graduate schools of business, and even then the bright young graduate in management is put into a training program. Increasingly the practice is to spend a year in post-doctoral work in another university to extend one's research training even beyond the scope of the doctorate. This stretching of the educational process to the point where the first professional income is not earned until age 25, or in some lines, 30 is expensive in many ways, as has been widely recognized by foundations, government, and, somewhat earlier, by parents. Together with the knowledge explosion, it is putting enormous pressure on our educational institutions to break out of old patterns and to find new ways of producing and packaging professional education.

These problems can properly be discussed in three parts—preprofessional education, professional education as such, and mid-career upgrading. The divisions are hard to keep distinct, as will become apparent, but each section presents particular problems for the university in trying to rationalize and increase the efficiency of its professional mission.

By preprofessional education is meant the provision of the prerequisites for professional training. In some fields such as law these are nothing more than the good general education which used to be required of the British civil servant. But I refer rather to the mathematics and physics which are needed for engineering, to organic chemistry and anatomy which used to be all that were needed as prerequisites for medical school, and to the elementary courses in a given field which must be mastered before a student goes on to the advanced reaches of any subject.

Any subject can be taught as general education, as preprofessional training, and for professional uses. Freshman mathematics can be taught so that the student learns to differentiate and integrate, which he needs to know preprofessionally outside of professional mathematics, or he can be taught them and mathematical analysis as well, either for general education, which includes a glimpse of the beauties of the mathematician's universe, or as part of preprofessional work in mathematics. The clash between two of the ways of ad-

dressing a subject was neatly illustrated last spring by the resignation of 11 members of the Dartmouth medical school faculty who wanted to teach biochemistry, micro-biology and cytology as professional subjects rather than as preprofessional training for medicine.

The problem in the humanities is easier. One can argue that the ability to write a simple sentence is preprofessional education widely neglected, but for the most part English is taught as general education. But mathematics, physics, and chemistry are general education of a special sort, preprofessional education more narrowly.

The Challenge of Teaching

Most professional mathematicians, physicists, and chemists—and economists, political scientists, and psychologists as well—prefer professional to general or preprofessional teaching. Preprofessional teaching for the narrow group of students which you know is going to be drawn further into the professional subject being taught is challenging and fascinating. But as general education, or preprofessional training for other fields, such training often fails to engage the excitement of the ordinary as opposed to the great teacher. The ordinary teacher is more engaged by the subject than by the students as people. The result is that he may succumb to the temptation to neglect this teaching, or to make it interesting to himself by making it more professional, or both. On his side the student is either bewildered or bored, or both. It is on this account that the quality of teaching in the first two years presents a problem of particular difficulty.

The problem is met not only at the university level. In medical school, I understand, the first two years are taken up with some anatomy and physiology but with a great deal of preprofessional training in biophysics, biochemistry, and subjects like pharmacology. It is difficult to have these well taught on the one hand, and well learned on the other, when the main professional mission of the school is clinical medicine.

Articulation: Skip or Repeat?

Articulation is painful. If the superbly trained preprofessional has to follow the regular route he is bored and discouraged. If he tries to skip large portions of early professional training which his preprofessional work presumably covered, he is never quite clear what of the work the others are taking he has mastered and what he has not.

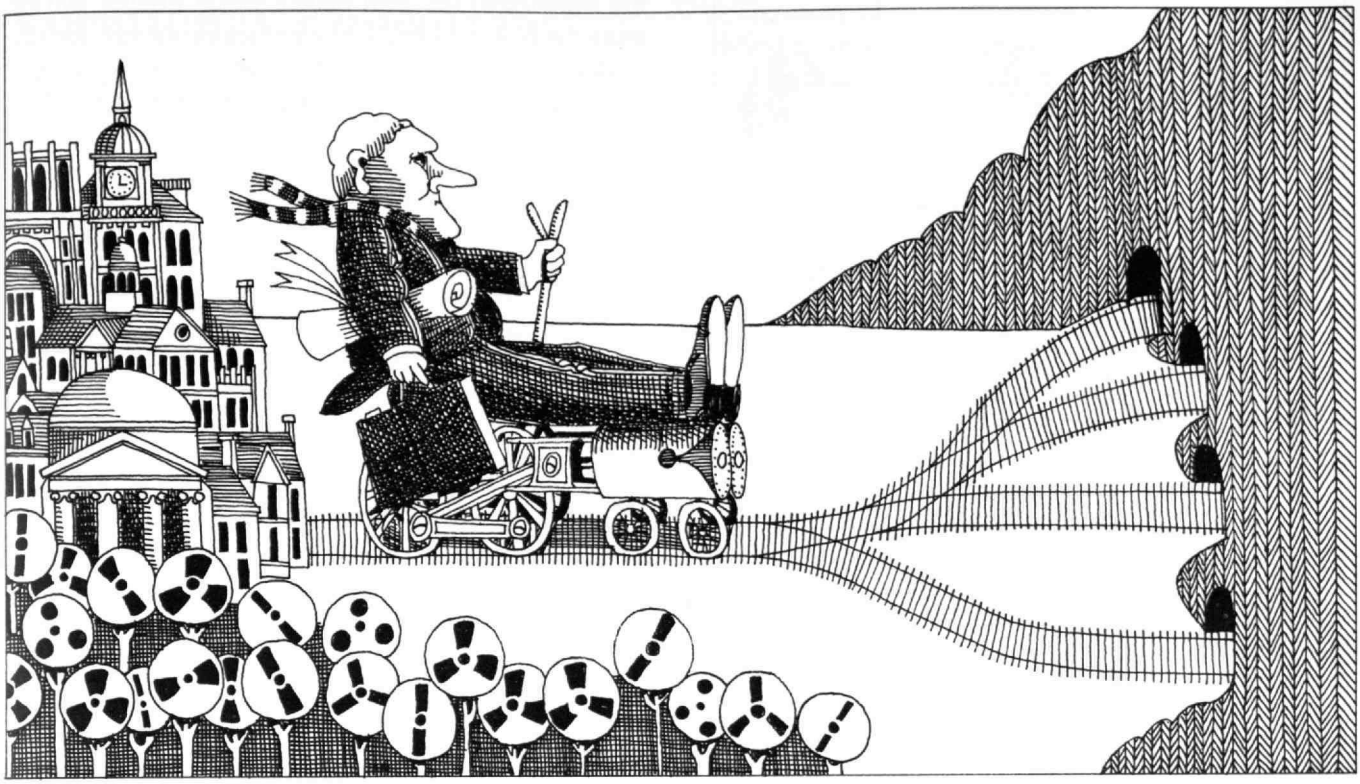
Medical schools' admissions officers profess to be looking for broad-gauged young men and women with wide-ranging interests developed through general education rather than those who have extensive study and good grades in biology, chemistry, mathematics and physics. In their admissions choices, however, they are likely to favor the science specialist over the generalist on the score of preprofessional advantage. But this leaves the particularly well-trained young scientist likely to waste a great deal of the first two years of medical school while his generalist colleagues catch up. The problem is particularly acute for graduates of such preprofessional curricula as molecular biology at places like M.I.T. for they are catapulted somewhere into the middle of the normal first two years of training in medicine.

We have a similar problem in graduate education in economics for those students who come to us with excellent training in social science from their undergraduate institutions. For them to take the first year of graduate training—the regular courses in micro- and macroeconomic theory, mathematics, statistics and economic history—involves a duplication of some 60 to 75 per cent of what they have already studied. The second time around, and more systematically, this material is warmed-over porridge and not very appetizing. But to leap right into the second year of graduate work runs the risk of missing vital elements of preparation in the 25 to 40 per cent which has been missed. And we find that the undergraduate teachers have exhausted a considerable portion of the wonder and beauty of first looking into Marshall's *Principles,* if I may transliterate a line from Keats; indeed, a small but disturbing fraction of our best-taught young men become sufficiently discouraged to drop out. This can be regarded perhaps as a difficulty of articulating professional rather than preprofessional education, but it is a general one.

The Several Routes to a Profession

Some of these difficulties might be overcome if the choice of profession were made earlier and all students followed the same path. But this is impossible. Professional choices are not made consistently by various young people at the same stage, with the result that there must be a variety of avenues to professional education, rather than merely one. And if professional choice is made only in the junior year of college, at 21, it is hard to push the preprofessional training to lower levels.

While there are children who have known since the age of five that they wanted to be involved with electricity, or machinery, or the human body as a life's work, career choice is more and more presenting a difficult problem to American youth. Two generations ago father dominance helped, and hurt, such choice. Today fathers know enough not to push their children in directions of which they approve—or most of them know enough. The result is that career choice is much more squarely left to youth and is consequently fraught with youthful tension. The college dropout phenomenon is one aspect. Some young men welcome the army, the Peace Corps, or a year of travel, as legitimate means of delay in facing the necessity for career choice. Certain types of graduate training—business and law—are an escape from the need for decision. But even at M.I.T. at least 30 per cent of our undergraduates end up majoring in a different field than they put down as their intended specialization when they were admitted, and 20 per cent actually switch majors after they have chosen one at the end of their freshman year.



The social sciences labor under a considerable disability here, because fixing on a social science as a career comes as a rule much later than comparable decisions in science, engineering, medicine, or humanities. Children are aware of the body, animals, earth, sky, machines, and even prose, poetry, and the existence of the past, long before they become aware of the complexities of human society. The early models for career choice, as is well known, are firemen, policemen, and, in my day, streetcar conductors.

The consequence of late career decision is that one cannot insist that all applicants for professional training have completed their preprofessional work on admission—that all M.I.T. students, for example, come with calculus, or all medical students already have molecular biology, biochemistry, and biophysics. The only equitable, and I may add efficient, system of education is to keep all options open as long as possible. In consequence preprofessional cannot be dumped completely onto other training systems—by the technological institutes on to the schools, and by the graduate training programs on to the colleges. Some preprofessional education must be kept side-by-side with the professional, to offer a chance for the later chooser to catch up. This means that professional education must maintain a several-track system.

To keep preprofessional and professional education side-by-side in the same institution presents problems of teaching, as has already been mentioned. The ordinary instructor finds it easy and productive to take on advanced professional students—undergraduates in their senior year, or graduate students who have mastered the fundamentals. They work together, as members of a scholarly team, able to communicate in two directions. Preprofessional teaching, as I have said, is less interesting.

There is no good solution for this problem. To divide the university into upper and lower division, as is sometimes done, creates a two-class system with invidious overtones. To separate preprofessional training off into colleges with dedicated teachers, and admit students to the universities only into graduate school from the four-year colleges and into the upper classes from junior colleges would not only violate traditions—which are important in the lives of institutions—but also compound the problem of articulation. The solution we see at M.I.T. is to strengthen the place of preprofessional teaching in the value system of the Institute, to restore it to the high esteem it enjoyed before it slipped under the pressure on staff of research, consulting, professional service and keeping up with the literature. No one contemplates that it is possible to staff a first-rate technological institution completely with instructors who are first-rate at teaching as they are at research and professional service. But the administration, the faculty, and the students can let all instructing staff know that whatever the professional demands on their time, teaching is not the marginal and dispensable activity.

Professional Education

The central issues in professional education have mostly been touched upon already: the extension of the material to be mastered, the difficulties of starting earlier because of late career choice, the downgrading of the bachelor's and master's degrees, the development of postdoctoral training, the need for a rigorous scientific (instead of rule-of-thumb and seat-of-the-pants) ap-

proach in the applied fields because of the rapid rate of obsolescence, and so on. But I would make three points.

First, there is a risk that the revulsion from the empirical approach to engineering and applied social science in favor of science and pure theory can be carried too far. The simplest solution to a problem is not only the most efficient; it is also the most elegant. While it is true that one can stumble on solutions to applied problems as a by-product of pure theory, it is also true that theory is sometimes pursued for its own sake beyond the point of diminishing returns. It is not clear how much biophysics should be known to the gynecologist, how much topology to the student of fiscal policy, how much communication theory to the professor of the French language. I sometimes characterize these problems by a reference to medieval scholasticism and ask how many angels can dance on the rate of interest. Theory and pure mathematics are at the top of the pecking order in the intellectual world, and this is as it should be, just as the theoretical and mathematical requirements for the lowliest professional specialties have been increased. But high power can be overdone.

Second, the question of interdisciplinary education remains complex. The practitioner continues to be trained in a variety of fields—history, law, economics, and political science for the foreign service officer; contracts, property, wills, constitution and international law for the lawyer (although the Yale Law School curriculum has been altered to include a year and a half of specialization); finance, statistics, accounting, marketing, and psychology for business; and so on. At the same time, research is increasingly conducted by centers which bring different specialists to bear on a single problem with the vantage point of their own focus: aeronautical, electrical, and mechanical engineers in instrumentation, for example. But the professional teaching which produces these scholars cannot be widely interdisciplinary. A man must master one social or physical science before attempting to integrate two. In my experience, the joint degree which bridges two or more fields in one Ph.D. is satisfactory neither for the student nor the faculty involved, and not only because of jurisdictional jealousies. Each field has an intellectual integrity as a discipline, much as it may lack in providing the complete answer to a complex research problem. The attempt to master them all ends in a mastery of none.

This is a pat answer which does not fully satisfy me. More and more professional practice is becoming the equivalent of research. Architectural design of a building is no longer a simple problem of drawing and construction engineering; as we at M.I.T. are acutely conscious, an architect needs to master the Venturi principle if his skyscraper is not to set up wind currents or micro-meteorology which makes it difficult to open the building's doors. The designer of a rehousing project has to understand sociological grouping into communities.

Third, the narrowing distinction between research and practice leads me to question the desirability of intermediate degrees between the master's and the doctorate, which we have developed at M.I.T. in the engineer degrees. These degrees are awarded to students who have completed the course work for the doctorate but who do not write the thesis. Their justification is that the student has undertaken course work beyond the master's level and should get academic recognition for it. I can understand awarding the intermediate degree as a consolation prize to a student who is not being allowed to go on for the doctorate because of insufficient research creativity, or to a fully competent student who is unable for one reason or another to finish his thesis and who has gone far beyond the master's level. But these degrees should not become ends in themselves. Teachers should have had exposure to a substantial research experience, and so, if possible, should practitioners.

If there is an overpowering amount for professionals to learn, not only in the separate fields but in combining one or more of them, there is no need to learn it all at once, in the four, five, six, to ten years between high school and professional practice. One of the most

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Vocational Education: To Occupational Power

How can all men be prepared for the growing responsibilities of an age when humans are relieved of mental and physical drudgery?

By Nathaniel H. Frank, '23

Education for a vocation means something quite different from vocational education, at least to the general public. Also, the question as to the distinction between a profession and a vocation permits of no simple and unambiguous answer. Most would agree that a professional derives his livelihood from the exercise of his profession—certainly this serves to identify a professional gambler or a professional athlete—and in this sense vocation and profession are synonymous. One often thinks of professions as activities in which the practitioners band together to form professional societies which set standards and criteria for formal identification and entry into their ranks. But this can hardly serve as a general definition since, for example, labor unions engage in much the same sort of practice in their apprenticeship programs and common usage does not identify members of labor unions as professionals. Perhaps the best one can do is to define a profession as an activity in which the demands for competence require lengthy and advanced formal education. In this sense professional competence becomes but a part of the broader concept of occupational competence.

The purpose of this introduction is to underscore the quite arbitrary distinctions that are made in the designations, and in the associated levels of social status and acclaim, of the variety of occupations in which people engage as contributing members of society. The statement that M.I.T. is a vocational school inevitably evokes smiles but, in spite of its high degree of veracity, is seldom taken seriously. Vocational education, despite the relatively low esteem in which it is regarded by the public at large, shares much in common with professional education. For example, the goals of creating specialized competence and of attaining skill as a practitioner are characteristic of both. Yet vocational education stands apart from the rest of education.

It is useful to look briefly at the history of vocational education in this country to see how this happened.

The story of vocational education as an enterprise distinct from the rest of education starts in 1917 with the passage by the U.S. Congress of the Smith-Hughes Act. This Act made federal funds available for the first time to support a part of secondary education and has had a deep and continuing influence on vocational education throughout the nation. Its provisions were rigid and its intent was to support the secondary education of young men and women in the development of specific, directly marketable skills. At the time of its passage, this Act initiated a realistic program for many young people, realistic because the requirements for skill competence were relatively stable over the period during which a person might be expected to work.

The 1917 Act was amended slightly in 1946 by the George-Barden Act, which increased the funding; together these have led to the establishment of a well-entrenched bureaucracy operating through State Directors and Divisions of Vocational Education. Largely because of its independent financial resources, vocational education (for which some of the costs are reimbursable from federal funds—hereinafter referred to as standard vocational education) has grown to be an enterprise largely independent of the rest of education. In particular, this independence is reflected in the specifications of standard vocational curricula and of requirements for vocational teachers. In Massachusetts, for example, the following practice exists: One-half the vocational student's time is devoted to shop or other specific vocational skill training, one-quarter to academic work in so-called related subjects and the remaining quarter to general education subjects, usually social studies and English. To teach vocational skills and the related subjects, a teacher is required to have had eight years of trade or industrial experience and to pass 260 clock hours of education courses given by members of the Vocational Division of the State Department of Education. No formal academic requirements exist.

A major expansion both in the funding of and in the variety of allowable standard vocational offerings came into being with the passage of the Vocational Education Act of 1963. This Act made available federal funds in support of programs other than the largely trade and industrial programs of the past and of vocational programs in the 13th and 14th grades. However, programs leading to a baccalaureate do not qualify for support under this Act. The spectrum of programs now in standard vocational education is broad, but varies markedly from state to state. For example, no business courses in Massachusetts derive any financial support from vocational education funds. Standard vocational education takes care of something of the order of 7 per cent of the senior high school population. It has been criticized increasingly for clinging too long to programs training youngsters for obsolescent skills, for deficiencies in the quality of its academic content, for its relatively high cost per student and for its persistence in planning and proliferating its programs in terms of narrowly aimed targets of specific skills or, more recently, of so-called

clusters of related skills. All in all, the current concern about the shortcomings of vocational education seems to stem largely from the high and relatively narrow degree of specialization characterizing the whole effort.

Vocational Objectives in All Education

In light of the rapidly changing needs of the American economy and social order, this concern as to the adequacies of current practices of occupational, vocational and technical education is growing all over the nation. Stimulated by a request from the Massachusetts Senate Majority Leader, Kevin B. Harrington, who was chairman of the Special Commission Relative to Improving and Extending Educational Facilities in the Commonwealth of Massachusetts, and with the encouragement and support of the then U.S. Commissioner of Education, Francis E. Keppel, and the U.S. Office of Education, M.I.T. undertook an intensive summer study in July and August, 1965. This study, arising as it did from the evident inadequacy of contemporary education in providing the majority of the youth of this country with necessary occupational skills, addressed itself to the following major problem: What pattern or patterns of education will best prepare American youth for satisfying, useful and gainful occupations at the end of their formal schooling?

This question clearly required consideration both of general education and of vocational and technical education. A principal concern was the changing nature of employment and career opportunities for individuals in a rapidly moving, increasingly sophisticated technological economy. In essence, the main thrust of the study was the attainment of satisfying occupational and vocational objectives as part of the mission of *all* education, not only of standard vocational education.

Independent of what a person sets as his academic goals or what he does with his life, his education must be concerned with the manner in which he will function as a contributing member of society and with his competence and ability to perform such a function. It then follows that vocational education, with its overwhelming concern for what people do with their lives and for the development of vocational aptitudes and competences, has within it the potential of enriching all education. The benefits that can be derived from this sort of learning experience should be made available to many more youngsters than are now in standard vocational education. This is independent of whether present practices in vocational education are good, bad, or indifferent. Thus any meaningful attempt to set guidelines for the improvement of vocational education must of necessity concern itself with all education.

To attack the problem of generating meaningful innovation that will add new dimensions to the process of learning, one must first dispassionately examine current educational practice, both vocational and academic, to assess the shortcomings and assets of both, to understand how they function and how they now contribute to and what they might ultimately contribute to the goal of generating occupational competence for a rapidly changing future. So it is now appropriate to summarize briefly the principal shortcomings and assets, first of vocational education and then of academic education.

In the first place, current practice in vocational education, by and large, is a self-limiting process. This, as already mentioned, has its origin in the needs of the nation at the time of the Smith-Hughes Act. However, it has persisted longer than is comfortable, especially in terms of the problems that must be faced today and, even more importantly, in the foreseeable future. This self-limiting character of vocational education derives primarily from the fact that it is overwhelmingly concerned with training for specific skills. Such skill training is aimed at producing the ability to move directly into a job and to perform the required functions effectively. In fact, all the academic learning in the program is *inwardly* directed, especially in the related subjects, toward helping improve the skills. The skill training does not have to relate to a single job; it might relate to a cluster of related jobs, but it is skill training nevertheless. This is in essence the constraint which limits severely the ability of a person so trained to move effectively as requirements for skills change.

Second, there is the well-known and unfortunate low status of vocational education in the public esteem. Vocational education has become a much degraded term, a term which produces reactions so prejudicial that one is impelled to seek alternate ways of expression when one talks about creating vocational competence in its truest sense. Perhaps this is the principal reason for the emergence of the phrase "occupational education" as a substitute for "vocational education."

Another source of increasing concern has been the traditional pattern by which the goals for vocational education have been established. This is the pattern of organizing the spectrum of activities in terms of job classifications. The difficulty of keeping pace with the massive task of classifying the rapidly changing job requirements indicate that this is hardly a fruitful pattern to continue into the future. A different kind of assessment of this problem is called for.

Still another handicap of vocational education has been its almost total separation from the rest of education. The constraints that exist by virtue of this segregation have undoubtedly influenced the public image of vocational education. Only too often are vocational schools looked upon as a repository for rejects from academic education. This separation compounds the difficulty of attracting into vocational education the kinds of students that one would like. And it means that vocational education cannot easily take advantage of the best academic offerings available in terms of the total resources of the educational establishment.

One more concern, to which reference has already been made, is related to job classifications. This is the

increasingly short life expectancy of even the best of skills. It is frightening to see how rapidly the requirements for specific skills disappear from the market, relative to a time span of 30 or 40 years over which a person expects to be gainfully and usefully employed. This rapid rate of change has been reflected in the introduction of new materials, new processes, new systems, and new operations. These not only hasten the obsolescence of any given skill; they create enormous difficulties for the vocational teacher. No matter what degree of competence he brings into the teaching profession, his effectiveness as a teacher, even though it is initially first-rate, soon becomes first-rate for what *used to be* and not for what *is,* unless he has the opportunity to keep continuously updated. (This danger of obsolescence is not confined to the vocational educator. Indeed, the need for continuing educational opportunities exists in all areas of occupational activity.)

Finally, the very heavy traditional emphasis on providing vocational education at the high school level is embarrassing and will continue to evoke further embarrassment as the requirements for skills and their understanding, especially in technical areas, grow in sophistication.

The nature of this growing sophistication in technical areas is intimately related to the history of man's success in extending his senses. Every extension of man's raw senses, whether opening up the world of the very small or of the enormously large, has resulted in great additions to man's knowledge. And this knowledge is applied to practical and useful ends for society at an ever increasing rate. To function effectively in operations in which the essential processes occur on a scale far remote from unaided sense perception, a person must develop insight and understanding far beyond that which is adequate for working with much of the macroscopic world. Hence there is an urgent need to be increasingly concerned with post-high school learning, and this need will continue to grow and must be nurtured. Higher education, in fact continuing education without terminal goals, must be the aim for all. It is evident that current practice cannot be abandoned abruptly, but the center of gravity of effective vocational education must move toward higher education.

Assets of Vocational Education

Now to the assets of vocational education. One of its strongest attributes, hard to find elsewhere in education, is that of meeting the challenge of getting a job done and getting it done well. This does not necessarily refer to the way things are now being done but to the values inherent in the process. One of the unfortunate characteristics of American education is that it does not exploit adequately for learning purposes the instinctive desire and drive to do things, the challenge of getting a job done either competitively or just for personal satisfaction that is characteristic of most people. Too many students now reject the kind of education into which they are compressed because there is a bad mismatch between that which they want to do and for which they can generate enthusiasm and that which they are forced to do in a classroom. Central in vocational education lies the objective of learning how to accomplish a task and to do it well, whether it is the business of building something to specifications and doing a good job of it, the performance of a service function, or the operation of distributive organization with efficiency and dispatch. In all cases the aim is to create the ability to function effectively in a goal-oriented activity. If one could capitalize on this potential so that it could function as a vehicle to make the learning of basic academic subjects both necessary and relevant to doing a job better, one would have a better chance of moving many more youngsters into meaningful education. The Engligh language has been virtually exhausted in attempts to motivate young people. What can motivate many is the *active, personal doing of things.* There is a strong potential for excellence in what might be called investigative learning; in the process of tackling a job, being frustrated in trying to get it done; in being driven to understanding and to learning things that will lead to a satisfactory end result. Students will need guidance, but presumably many a youngster who fails totally to get interested in mathematics or science would be driven powerfully to learn these subjects if they could enable him to modify an internal combustion engine to generate more horsepower than that attainable by his competitive neighbor. It is just this sort of relevance of learning to the doing of things that could provide a new dimension for all education.

Another asset is the very tight coupling, of necessity, that vocational education has to the real world of occupations, careers and professions. This is in sharp contrast to much of what happens in academic education.

Academic Education Criticized

It is useful to attempt the same sort of exercise with academic education, focusing first on its shortcomings.

First, there is far too much reliance, almost exclusive in some areas, on what one might designate as transferable knowledge—on the business of learning by being told or by reading of what others have accomplished and codified. This, if done skillfully, can and often does create valuable deductive and analytic competence, but it does precious little to nourish inductive learning or to generate the ability to synthesize, to create, to design and to do new things—to build together out of elements rather than to analyze what others have put together.

Second, the character of much of what goes on in academic curricula is becoming increasingly abstract, getting remote from real situations and often from the observational evidence from which these abstractions have been developed. Unless something is done, this gap between abstraction and reality is going to grow.

Third, especially in the widely prevalent liberal-arts-oriented type of academic education, there is too little attempt to couple the learning with the problems of ac-

tual working situations. Certainly it is a rare student who emerges from an academic environment with an understanding of the *limitations* of his knowledge with respect to what it can contribute to his functioning effectively in real situations. It isn't that what he learns is not important; quite the contrary. However, the relevance and the coupling of this learning to reality often gets too little attention.

Finally, I believe that one of the most damning aspects of academic education at the pre-college level is that there is only one road to success. Quite independent of the quality of the college preparatory curriculum, there are no good and respectable alternatives. To be sure, there are curricula for general or basic education; but ovewhelmingly these provide but little knowledge and no marketable skills. More often than not they comprise watered-down versions of the college preparatory courses that have failed to benefit those students who must take them.

Assets of Academic Education

Now consider the assets of academic education, for there are many.

First, of course, such education enjoys the number one position in the pecking order of social status. It is the kind of education that parents and society, by and large, regard as the hallmark of success.

Second, it really does focus on intellectual development and has the advantage that one learns to deal with complex, abstract, and general ideas. As already pointed out, there will be an increasing premium for such competence as the years go by.

It enjoys another advantage in that the training and education of teachers is such as to insure the continuance of its envied position. Hence one finds feeding into the educational system more and more of the same liberal arts attitudes. However, such inbreeding is dangerous in that it raises serious obstacles to fundamental change in and broadening of education.

Finally, it prepares people to take advantage of the accumulated knowledge and skills of man. To be sure, academic education does this in the form of standard disciplines, categories of codified knowledge, the generalizations and abstractions of which comprise much of the treasured store of man's knowledge and understanding. And just because of the changing functions which can be foreseen for people as they will perform in society, academic education has enormous potential for future occupational competence.

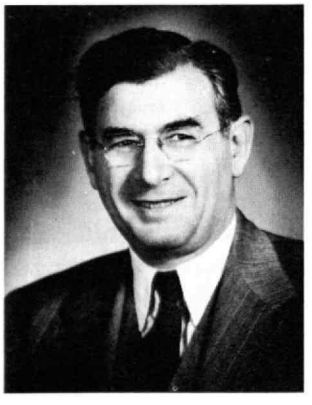
Now that we have presented some of the more salient aspects of the pluses and minuses at both ends of the educational spectrum, we must ask, "What are the needs?"

Toward New Relevance for Teaching

I submit that one of the urgent needs for vocational education is a total eversion of its philosophy, a turning inside out. Instead of functioning so that the learning that accompanies skill development is directed inward to strengthen the skill, one should utilize the doing of things, the active involvement of the student in developing skills, as a *road into* the need and relevance of fundamental learning that will broaden his horizon and increase his effectiveness and versatility. The arrows should point outwards from doing a job to learning that which is necessary to do and understand the job better, instead of making the doing the focal point and then learning relevant mathematics, science, history and language so that the skills will be improved. Thus the operation would become one of investigative learning where the student involvement with the observational and experiential evidence on which so much of our knowledge is built will carry with it the opportunity not only for acquiring knowledge but of obtaining some insight as to how knowledge has come into being. This type of activity exists at M.I.T. in its project laboratories.

Here one must utter a word of caution, because there is a standard phrase used extensively by professional educators called "learning by doing." This is often misunderstood, and it should be made clear that the investigative process discussed here is far different from that implied by a literal reading of these words. It is no trivial matter to make the transition from the observations and experiences of doing a real job with all the manifold complexities present in practical situations to those great abstractions and principles which we call fundamental knowledge. It is even extremely difficult to bridge the gap between those artificial observations and experiences which are called experiments and fundamental ideas. For example, theoretical calculations are concerned generally with finding solutions to idealized problems or model behavior; they make—or should make—no claim to dealing exhaustively with the totality of real complex situations. This is a basic and extraordinarily useful function of theoretical understanding and hence of all basic knowledge. We are well aware of the great emphasis that is placed on the application of fundamental knowledge to obtain solutions of real problems, and there can be no question as to the importance of such procedures. However, it would be an error to infer from this that one can cope successfully with real situations simply by applying

(Continued on page 54)



Nathaniel H. Frank, '23, was director of M.I.T.'s 1965 summer study of occupational, vocational, and technical education which observers say may be the start of a "major revolution in vocational training." Dr. Frank studied at M.I.T. for degrees in electrochemical engineering and in physics, joined the Faculty in 1930, was head of the Department of Physics for 10 years beginning in 1952, and since 1962 has worked on science and physics teaching.

The Trend of Affairs

11 F.P.S. at 19,400 M.P.H.

Success of the second unmanned flight in the Apollo program has apparently paved the way for manned operations under Apollo to begin this year.

And, according to Sumner Barton, Science Editor of the Boston *Globe,* rapid and successful development of all the Apollo equipment strengthens the possibility of a U.S. moon shot in 1968, one or two years earlier than originally planned.

Apollo 202, the second unmanned flight, provided the first flight test of the guidance and navigation system designed and developed for Apollo at the M.I.T. Instrumentation Laboratory under contract from NASA's Manned Spacecraft Center.

The spacecraft, launched from Cape Kennedy on August 25, flew a 93-minute suborbital mission over South Africa to splashdown in the mid-Pacific. Its guidance and navigation system controlled the operation of rockets fired four times during the flight to increase speed and place the spacecraft on its programmed course.

And although the splashdown was some 200 nautical miles uprange from the prime recovery vessel, the Associated Press reported that the angle of attack and velocity of the Apollo 202 at re-entry, the results of the operation of the guidance and navigation system, were far within the limits required by the Apollo program.

Indeed, the angle of attack was reported to be within 0.03 degree of that programmed (established tolerance was 0.5 degree); and the velocity was said to be within 11 feet per second of the optimum. (Re-entry velocity was about 19,400 miles per hour, about 28,500 feet per second.)

The Apollo 202 spacecraft weighed 56,900 pounds, more than seven times the Gemini craft; it reached a peak altitude of 706 miles, and its flat re-entry trajectory caused a "skip" phenomenon which subjected the heat shield, a second important element under test, to prolonged heating.

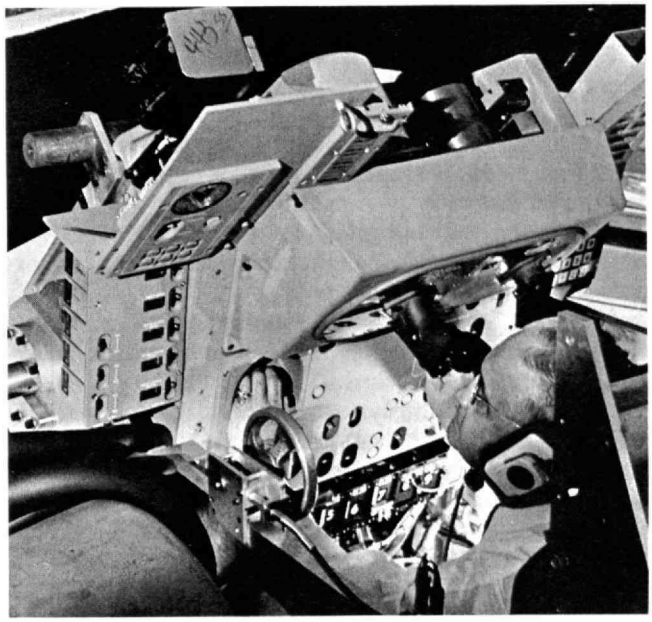
Doing What Machines Do Best

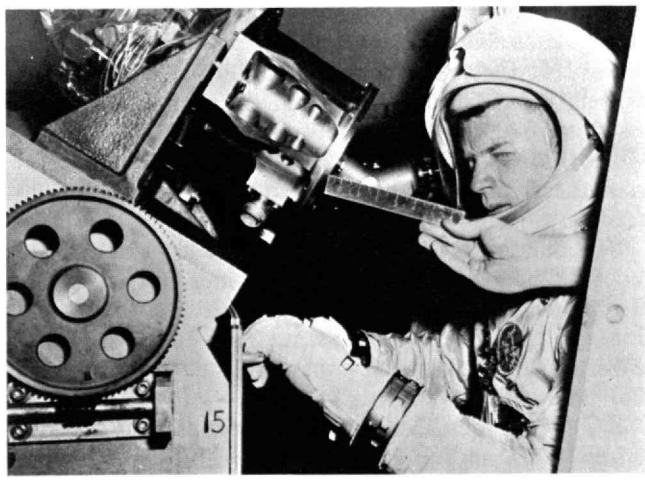
The Apollo guidance and navigation system includes three major subunits—an inertial measurement unit, a computer unit, and an optical unit. Only the first two were involved in the suborbital flight test. Though the optical unit was present on Apollo 202, it was not in operation, since it is used only by an astronaut-operator when he is on board.

The system is self-sufficient and flexible, and it is designed to make maximum use of both man and machine. It is self-sufficient in that it can perform all guidance and navigation functions of a complete mission, including all various possible aborts, with no aid from the ground. Nevertheless, there is also provided a redundant operational capability from the ground through tracking networks and radio links. It is flexible in that it can be used in a variety of alternative ways and modes in accomplishing the complex task of guidance and navigation to the moon and back. For example, modifications in flight plans and trajectories are easily accommodated.

Charles S. Draper, '26, founder and Director of the M.I.T. Instrumentation Laboratory, posed for this picture in the "space navigator," an Apollo capsule mock-up used in the laboratory for simulating the performance of the Apollo nagivation guidance system.

PHOTO: TED POLUMBAUM





If you are an Apollo astronaut, what must you do to help the M.I.T.-designed guidance and navigation system steer you to the moon and back? To learn the answer, astronaut Russell L. Schweickart, '56 (above), and some of his colleagues come regularly to the M.I.T. Instrumentation Laboratory to work with the engineers designing the system.

The Trend of Affairs

By coupling what men can do best (pattern recognition in sighting stars and landmarks, etc.) with what machines can do best (tedious and repetitive computation, high-speed switching, etc.) the M.I.T. engineers and scientists were able to design a system that allows the crew to exercise its various options and carry out human decisions efficiently.

Virtually all methods of obtaining data for guidance and navigation are used in the Apollo system—inertial, celestial, radio, and radar.

The inertial measurement unit establishes and holds a stable on-board frame of reference and then measures spacecraft acceleration against that frame of reference.

Information flows from this unit to the guidance computer and is used there to generate appropriate steering signals for the spacecraft rocket system. Likewise, spacecraft position information is fed to the computer from the ground (based on ground tracking) and from the optical unit.

The optical unit enables the astronauts periodically to realign the spatial orientation of the inertial reference unit to the stars and to earth and moon landmarks. It consists primarily of a scanning telescope used to acquire stars and landmarks and a space sextant to measure angles between two sighting points.

The Apollo guidance computer is a sophisticated and versatile general purpose digital computer organized for deep space flight.

Astronaut and computer communicate in a coded numerical language through a 21-digit character display and a 16-button keyboard. The astronaut inserts data and commands to the system by punching numbers on the keyboard that are then displayed to him for verification in electro-luminescent counter-type readout windows. The computer communicates with the astronaut by displaying numbers in the same windows. (When the computer requests the astronaut to take some action the numbers flash to attract his attention.)

Industry-University Co-operation

The guidance and navigation system was designed at the M.I.T. Instrumentation Laboratory in co-operation with an industrial team which produces the operational systems, headed by AC Electronics Division of General Motors Corporation as prime contractor responsible for manufacturing, assembly, testing, and subsystem integration.

Subcontractors for the major subsystems are the Raytheon Company for the digital computer and associated display keyboards and Kollsman Instrument Corporation for the optical subsystem. This same industrial team provided industrial support for the M.I.T. design and development effort.

AC Electronics has continuing responsibility for system field test and check-out, along with the other contractors, and M.I.T. has continuing responsibility for programming the various Apollo missions into the operational guidance and navigation systems.

The same university-industry team is developing the guidance system that will be used aboard the Apollo lunar excursion module, the vehicle which two Apollo astronauts will ride from the command module in lunar orbit down to the lunar surface.

Charles S. Draper, '26, Professor of Aeronautics and Astronautics who is often called the father of inertial guidance in the U.S., is director of the M.I.T. Instrumentation Laboratory. Other Alumni in key roles in the Apollo guidance effort are Ralph R. Ragan, '52, Deputy Director of the Instrumentation Laboratory for NASA programs; David G. Hoag, '46, Director of the Instrumentation Laboratory Apollo Program; Milton B. Trageser, '51, who was Instrumentation Laboratory Director before taking charge of the laboratory's advanced planning group; Benjamin P. Blasingame, '50, general manager of AC Electronics Division; Donald J. Atwood, Jr., '48, Director of Engineering at AC Electronics Division; and William R. Kurtz, '47, Apollo program manager at the Space and Information Systems Division of Raytheon Company.

An "Irreplaceable" Public Servant

When nearly 20 years ago a young candidate for the master's degree in engineering at M.I.T. was asked by the admissions officer what he planned to do with his life, he replied, "I hope to be good enough as an engineer to be able to get into politics so that I can devote some of my life to public service." In 1964 the Second District of Michigan made the plan come true by sending Weston E. Vivian, '49, to the U.S. House of Representatives with a 1,500-vote margin over his conservative Republican opponent, George Meader.

So far as is known he is the first member of the House of Representatives to hold a doctoral degree (from the University of Michigan) in either science or engineering. Logically, Dr. Vivian's assignments include the House Committee on Science and Astronautics. Here, his professional education and experience have been—in the words of Representative Joseph E. Karth of Minnesota—"tremendously helpful to the rest of us who are less sophisticated in fields of technology." Representative Karth is chairman of the Subcommittee on Space Sciences and Applications (responsible for unmanned satellites' programs); of Dr. Vivian he says: "The men who appear before our committee are professionally trained. Wes meets them on even ground. When such increasingly large public funds are being invested in scientific and technological programs, Vivian's discernment helps us keep appropriations directed toward defensible research-and-development projects. He never misses a committee meeting; he is a conscientious public servant. In fact, I go so far as to say he is almost irreplaceable on our committee. I hope his constituents return him handsomely."

Few persons believe that Vivian's majority in the 1966 elections can be handsome; most gave him a slightly better-than-even chance against Melvin Esch, a Republican state senator who defeated Meader in the primary. Dr. Vivian is one of a small group of relatively young, tough-textured, first-term liberals who have measurably helped bring about enactment of many farsighted programs of social reform proposed by the Johnson administration. The scientific community, as well, should profit from Dr. Vivian's return, for no other man in the House of Representatives is so fittingly trained to support the urgent needs of basic research in science and engineering.

The enigma in Dr. Vivian's Second Michigan District is the independent vote. The district is changing rapidly from a conservative, rural community to one that is more liberal and industrial. Observers expected Dr. Vivian to capture a large portion of the university vote in Ann Arbor, and to find him supported by the younger management leaders of new industries now moving into his district. Labor and education will vote for him.

In general, Dr. Vivian agrees with this analysis. "Independent and moderate Republican votes were the balance that sent me to Washington the last time and I feel confident that I will retain and increase my strength among these groups on this occasion," he said in an interview a month before the balloting. "Independents are less issue-oriented, but they are strongly affected by the quality of service they receive from their congressmen. I have helped bring new jobs to my district; I have kept local leaders in touch with top Federal officials; I have been responsive to the social and economic needs of the district and to the requests of its responsible citizens."—*Clyde C. Hall*

A Magnetic Card Catalog

The familiar card catalog may soon be a victim of the growing volume of information in the world's great libraries.

A big library's card catalog is now so large that it can be more of an impediment than an implement to a scholar who does not know what entry the library has used for the item he wants. Complex filing rules and multiple entries magnify the problem, and limits of coverage also hamper many users.

Now it is proposed to substitute a computer-based catalog with bibliographic information stored in a magnetic memory. Users will reach the memory through computer consoles located in the library or remotely linked by ordinary telephone lines.

Such a computer-based catalog could have the advantages of giving equal treatment to books, reports, articles, and all other library materials, some of which are not now represented in card catalogs at all; of providing display of its contents even at remote locations; and of giving each user ways to develop information interrelationships which fit his own particular needs.

Now the development of an experimental computer-based library catalog has begun at M.I.T. under a $627,641 grant of the National Science Foundation (with contributions from the Advanced Research Projects Agency of the Department of Defense). A pilot test will be attempted for the field of materials science and engineering; when the computer-controlled catalog is ready it will be used experimentally as part of the M.I.T. library system so it can be evaluated under real conditions of use.

The work will be done by M.I.T.'s Project INTREX, under the direction of Carl F. J. Overhage, where there are also plans for experiments in many other aspects of information handling, including those relating especially to newspapers (see below).

Toward Automated Newspapers

The technologies being developed for handling information in libraries of the future may also be exploited by newspapers. New means of information storage and retrieval, analysis, character recognition, reproduction, and information distribution all have applications to newspapers, and this presumably includes such diverse newspaper activities as interrogation and reporting, composition, make-up, justification, hyphenation, correction, and even proofreading and certain phases of editing.

How can information transfer engineering be applied to publishing? In the M.I.T. Computation Center (l. to r.) J. Howard Wood, publisher of the Chicago *Tribune* and president of the American Newspaper Publishers Association, Carl F. J. Overhage, director of Project INTREX at M.I.T., William B. Kehl, '54, associate director of the M.I.T. Computation Center, and James L. Knight, president of the Miami *Herald* and president of the A.N.P.A. Research Institute, meet to discuss a new research project being launched at the Institute by A.N.P.A.

To explore how these things may be accomplished the American Newspaper Publishers Association has established a newspaper research project at M.I.T.; and William B. Kehl, '54, who has recently come to M.I.T. from service as director of the Computation and Data Processing Center at the University of Pittsburgh, will be its technical director.

The effort sponsored by A.N.P.A. will initially be aimed toward computer-aided procedures in editing and information management.

James L. Knight, President of the Miami (Fla.) *Herald* and of the A.N.P.A. Research Institute, views this as "one of the potentially greatest undertakings of the ANPA Research Institute. The project," he said in Cambridge at its inauguration in September, "provides the newspaper business for the first time with a direct link with the most advanced research in the broad field of information transfer engineering. Out of this arrangement we hope to find for newspapers the basic elements of new components and systems which, with further specific research, can be applied to the production of finer, more complete newspapers on a practical, sound economic basis."

The new undertaking at M.I.T. grew out of recommendations by the A.N.P.A. Scientific Advisory Committee, of which Athelstan F. Spilhaus, '33, Dean of the University of Minnesota Institute of Technology, is chairman; other members are John R. Pierce of the Bell Telephone Laboratories, Inc., and Carl F. J. Overhage, Director of Project INTREX at M.I.T.

The project will be carried on at M.I.T. in close association with Project INTREX, a larger program of information transfer experiments.

The Trend of Affairs

Hayden Gallery: Vital Is the Word

The vitality and variety of Twentieth Century sculpture was demonstrated in handsome array at the Hayden Gallery this fall. On view in the Institute's showcase for fine art and outside in the adjacent court, close by Alexander Calder's monumental stabile, *"La Grande Voile,"* were 74 pieces of sculpture from the collection of Mr. and Mrs. Max Wasserman of Newton, Mass.

Max Wasserman, '35, is a Boston builder and developer. He and his wife, Jeanne, have been collecting art, chiefly contemporary, for more than 12 years.

Their extensive collection, which includes paintings, drawings and prints as well as sculpture, is housed in their uncompromisingly contemporary house in a wooded section of Newton's Chestnut Hill. Recently a second collection has been abuilding by the energetic, art-minded couple. It is slated for a luxury apartment house Wasserman is now constructing in Boston's Back Bay at 180 Beacon Street. To be known as the "180 Beacon Street Collection," it will be installed in a special interior setting and in a sculpture garden outside.

If this, the second or "public" collection, is anything like the first, or "family" one, it should prove a real double-header.

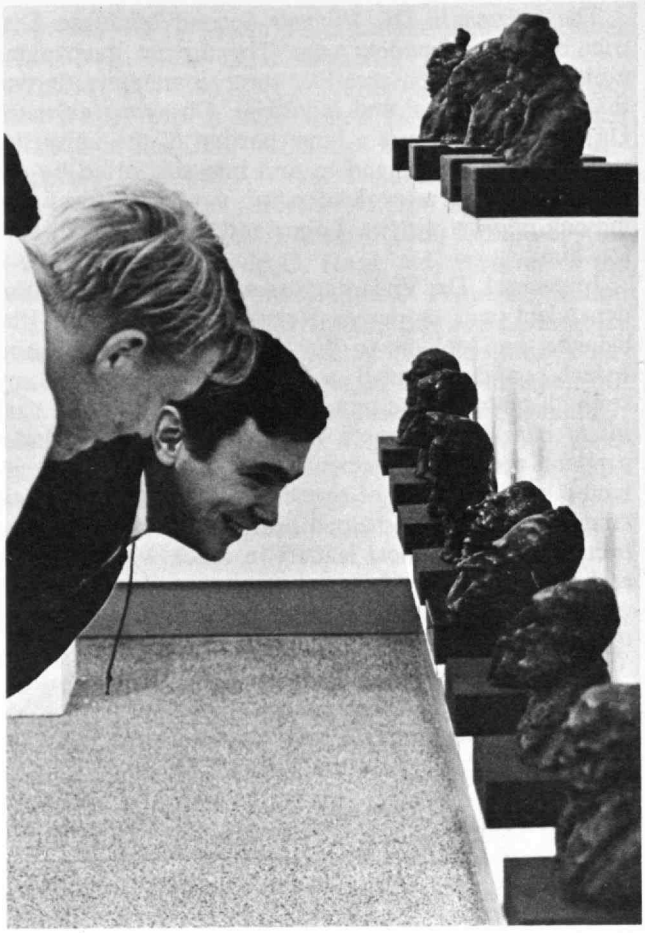
From its opening September 14 through its closing October 10, the Wasserman sculpture loan in the Hayden Gallery proved a popular as well as a critical success. No wonder. Many of the biggest names in sculpture in the past 100 years, which is to say from the beginnings of modern art to the meaningful explorations of today, were represented. And Greater Boston's museums and public collections are woefully deficient on this score. Apparently mindful of this, Tech students as well as students from many another Greater Boston university, college, and school flocked to the exhibit. So did art lovers from the nonacademic world. This, one might add, is par for the course, for the Hayden Gallery has long since been an integral part of the Greater Boston art world. It serves not only the Institute but the community as well.

Every private collection, of course, reflects the personal interests of its proud possessors. Yet often these interests are of limited interest to others. Thanks to the catholicity of taste, eye for quality and enthusiam which went into their collection, this is not true of the Wassermans. Hence the patter of many feet.

The collection proves a fascinating, capsulated running commentary on the changes in sculpture, the directions it has taken, during a century of creativity. Indeed, it is fair to say these changes are unparalleled in the entire previous history of this ancient art form.

The collection runs the gamut from early expressionism in the classic mold by such Nineteenth Century greats as Daumier, Degas, and Rodin to the work of leading avant-garde artists of today. Kinetics, "Pop" and "Op" all have their innings here.

Yet the hard core of the Wasserman holdings is strictly Twentieth Century. Since there are certain ties that bind in all personal collections, one finds the accent in this one on molded sculptures, cast in bronze, whether figurative or abstract. However, the owners' tastes are constantly expanding. Artists working in assemblage, welded steel, aluminum, plastics, and chrome are included also. Thus, collectively, as remarked before, the creativity and diversity of modern sculpture is excitingly set forth.

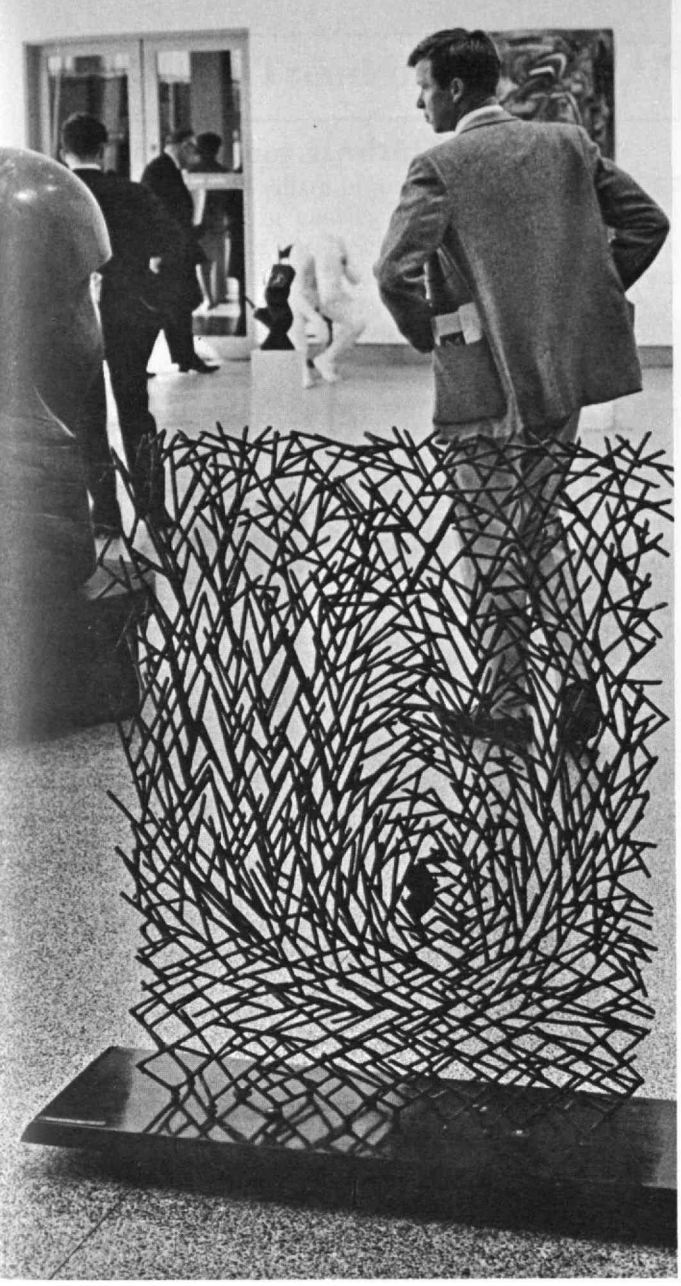


The sculpture collection of Mr. and Mrs. Max Wasserman ('35), shown in the Hayden Gallery and courtyard during the fall (and described in the adjoining columns by Edgar J. Driscoll, Boston *Globe* art critic), proved an exciting and popular attraction for the M.I.T. community and its Inauguration Day visitors.

And vital is the word for it. Far more so than today's painting, which—thanks to paste-ups, brushless and even paintless canvases, often seems to be losing its identity entirely. To be sure, modern sculpture received its inspiration from the ideas of turn-of-the-century pioneers of modern art in paint. But in sculpture the wellspring has far from gone dry. What's more, more and more contemporary painters are turning to art in the round full time.

Space precludes mention of all the varied, often choice sculptures in the Hayden's season opener. They ranged from a 17-foot-high stainless steel, kinetic abstract by George Rickey, a pioneer in the art world's new "Movement Movement," to the comparatively small set of Daumier busts. They were made between 1830 and 1832 as models for satiric lithographs he did for two Paris journals.

Other famous names in the collection include Henry Moore, Harry Bertoia, Julio Le Parc, Reg Butler, Leon-



PHOTOS: BOB LYON

ard Baskin, Pietro Consagra, Marcel Duchamp and his brother, Duchamp-Villon, Max Ernst, Giacometti, Richard Filipowski, Jacques Lipchitz, Matisse, Mirko, Germaine Richier, David Smith, Jean Tinguely, Ernest Trova, and Laura Ziegler.

The latter is represented by a small, terra cotta portrait of Mr. Wasserman, who was recently named to the M.I.T. Art Committee. He is seen seated, in pensive mood—undoubtedly thinking up new ideas for the committee to encourage the growth of the arts program at the Institute. Or is it a new acquisition that he has in mind?

—Edgar J. Driscoll, Jr.

The Immortality of the Cook

Despite the growing shortages of foodstuffs in many nations of the world, "artless substitute and insipidity" have no place in the human diet.

Stanislaw K. Kon, in his 1966 Underwood-Prescott Lecture at M.I.T. in mid-October, called for a "gigantic effort" on our planet to increase the production and improve the conservation of food. "It is to food science and technology," he said, "that we must look if people are to have enough of the right stuff to eat."

He called for technological developments affecting the supply of edible plants and animals, improved food-processing techniques, and new chemical and biological syntheses. But success, he said, will require "the blending of the wisdom of the agriculturist, the science of the chemist, the skill of the technologist, and the knowledge of the physiologist with the art of the cook.

"With the surge in new developments, new processes and new foods these questions of palatability, acceptability, and satiety will play an ever-increasing part. Knowledge of the interplay between basic vital functions and nervous influences is a condition of our success in the application of food science and technology to the ever-increasing demand of man for food," Dr. Kon declared.

Dr. Kon, who has just retired as head of the Nutrition Department at the University of Reading, England, received the 1966 Underwood-Prescott award for outstanding research into protein nutrition, calcium metabolism, and the effects of commercial food processing upon nutritive values.

ENGINEERS & SCIENTISTS

MARTIN has SCOPE in NUCLEAR projects and assignments!

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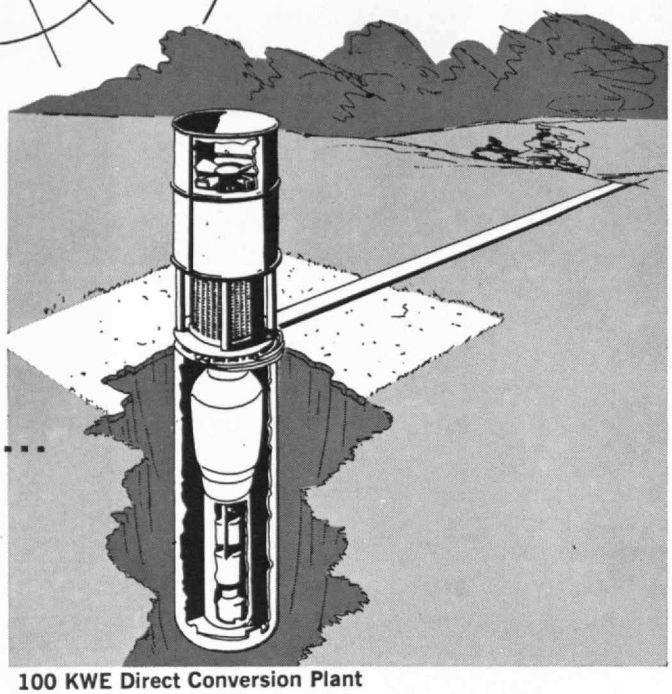
On Land.....



100 KWE Direct Conversion Plant

In Space.... On (and under) The Seas

From watts and pounds to megawatts and megapounds . . . from the SNAP-29 small nuclear generator for space missions to the TURPS (Terrestrial Unattended Reactor Power System), the scope of Martin nuclear projects and assignments for Engineers and Scientists is great.

Both thermoelectric and thermionic energy conversion devices are employed.

Yes, Martin, which produced the MH-1A Floating Power Plant, the SNAP-19 power source for weather satellites, the SNAP-7E radioisotope generator for a Navy underseas navigational beacon and now has tiny nuclear generators weighing but a few ounces in the design stages, has a wide range of professional challenges and opportunities.

We have immediate openings for aggressive Engineers and Scientists who want to move ahead in the rewarding nuclear electric power field that is basic to our economy.

Opportunities exist in these and other fields for Engineers and Scientists with a wide variety of technical disciplines. A background in nuclear technology is desirable, but not necessary. In fact, many of our engineers and scientists have moved ahead rapidly in nuclear programs at Martin after prior experience in the aerospace and aircraft industries.

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The Trend of Affairs

Fat Teeth: Poor Health Risks

Fat, the suspected villain in many human diseases, may also have a role in causing tooth decay.

Research in the Oral Science Laboratories of the M.I.T. Department of Nutrition and Food Science shows that teeth, as well as other parts of the body, store fat when food is plentiful and give it up in times of relative hunger.

Lipids, which include simple fats as well as complex metabolically active compounds, account for only about 1 per cent of the total weight of teeth. Because this amount is so small, dental investigations have not heretofore paid much attention to it. But now Robert S. Harris, '28, Director of the Laboratories, and others in his group, have begun systematic studies. Already they have reported differences in the lipid patterns of the teeth of 16 species of animals; it is not yet clear whether these differences are due to genetics or diet.

Now, in new experiments with underfed and normally fed rats, Dr. Harris and Dr. Salil K. Das, '66, have found (and reported at the seventh International Nutrition Congress in Hamburg, Germany) variations in the fat content of teeth in accordance with the variations in diet, the teeth of hungry rats being abnormally low in lipids.

No correlation with dental caries was attempted. Nevertheless, the suggestion is made that "lean" teeth are more resistant to cavities than "fat" teeth.

Radioactive tracer studies have shown that minerals and other nutrients are transferred through tubules which honeycomb tooth structures. It is now postulated that lipids collect in dental tubules of well-fed animals, plugging the tooth passages and hindering tooth metabolism. It may be significant that the underfed peoples of the world tend to have excellent teeth, while those who are amply fed often are seriously afflicted with tooth decay.

A New Class of Celestial Objects?

A new era in x-ray astronomy has been opened by the identification and measurement of the visual counterpart of Sco X-1, a strong x-ray source which was first discovered in the constellation Scorpio in 1962.

The location of the source was measured to a precision of one minute of arc in a rocket experiment carried out by a team of scientists from M.I.T. and American Science and Engineering, Inc., of Cambridge last March. An x-ray scanner and a co-ordinated camera were carried aloft by an Aerobee rocket from White Sands, N.M., under NASA sponsorship. Co-ordination of the camera and scanner records made possible the accurate fix, an indication of the size of the radiating body, and a prediction of its appearance in the constellation Scorpio as a 13th magnitude blue star. Using this data, scientists at the Mount Palomar and Tokyo Astronomical Observatories trained their telescopes into Scorpio and independently found the predicted blue star within one arc minute of the stated x-ray position.

It is now postulated that the x-rays originate either through emission from a hot, thin gas (a suddenly flaring star) or from synchronous emission from energetic

The Trend of Affairs

electrons in a magnetic field (a cloud of gas condensing into an infant star).

The visible object has characteristics of an old nova both in the spectrum and the variability of its radiation. Its most striking characteristic, of course, is its emission of some 1,000 times more energy in x-rays than in visible radiation. This large x-ray output implies that the bulk of the observed continuum visible emission can be accounted for by the same process which is assumed to give rise to the measured x-ray emission.

This interpretation will be tested in a forthcoming Apollo experiment, in which the astronaut will be asked to measure the x-ray emission from Sco X-1 from earth orbit while the 200-inch Palomar telescope is used to measure the visible radiation from the star. The correlation between variations in visible and x-ray radiation will help to decide between the hot, thin gas and synchrotron postulates.

Among those reporting on this work are Gordon P. Garmire, '62, Assistant Professor of Physics at M.I.T., and Riccardo Giacconi of American Science and Engineering, Inc. Minoru Oda, Visiting Professor of Physics at M.I.T. last year, and Herbert Gursky of American Science and Engineering, Inc., conducted the experiments using the Aerobee rocket.

They believe that the discovery of the visual counterpart of Sco X-1 has the same importance to the x-ray field that the first optical identification of radio objects (which led to the discovery of quasers) had to the understanding of radio sources. "If this object is an old nova, as suggested by some of its characteristics," they report, "then it is a very peculiar one. If not," they say, "then it could be the first member of a completely new class of celestial objects."

The Electronic Activity of Catalysts

Despite their importance in many industrial processes (almost 20 per cent of the manufactured goods represented in the gross national product are produced by techniques involving catalysis) very little is known about the basic mechanisms of catalysts which act to cause and speed chemical reactions.

Now Professor Raymond F. Baddour, '49, and Assistant Professor Max C. Deibert, '64, in the M.I.T. Chemical Engineering Department have found that very tiny electronic variations at the interface of a catalyst and its support can produce major changes in the catalytic process involved, and they believe the findings may be an important step to better understanding the entire field.

Dr. Baddour and Dr. Deibert, working under a National Science Foundation grant, first made an accurate analysis of the electronic interaction between a metal support and a catalytic semiconductor. They used nickel deposited on pieces of crushed single-crystal germanium the electronic properties of which had been carefully determined.

Then they used this nickel-germanium material as a catalyst to reduce formic acid to hydrogen and carbon dioxide. They expected the rate of reaction to vary with the calculated variations in the electronic interaction between the nickel and germanium. It did; but even the

tiniest variation in electronic activity brought about a surprisingly large change in reaction rate.

Even when calculations indicated that only one additional electron was transferred per 10,000 nickel atoms in the catalyst layer, catalytic activity was increased by a factor of as much as three.

The significance? It appears, according to Professor Deibert, that "knowledge and control of the amount of charge transfer between a support and a catalyst can help optimize the effectiveness of industrial catalysts." And the research is continuing with measurements on other catalysts and supports, leading eventually, Professor Deibert hopes, to a nonempirical tool to aid in the development of new catalysts and processes.

Full-Range Intercontinental Guidance

SABRE, an advanced guidance system designed to steer intercontinental missiles all the way to their targets, will soon join Apollo guidance system (see page 37) among the signal contributions of the M.I.T. Instrumentation Laboratory.

Missile guidance systems now in use are installed aboard booster rockets and guide only to a point in space where the warheads separate and fall to their targets along ballistic trajectories. Present systems cannot be mounted on the missiles to guide throughout the journey because they cannot withstand the extreme re-entry forces.

The SABRE (*S*elf-*A*ligning, *B*oost, and *R*e-*e*ntry) system uses a wholly new concept which protects the inertial components—gyroscopes and accelerometers—during re-entry.

Two industrial contracts for building prototype SABRE systems based on the Instrumentation Laboratory design have now been awarded.

Instrumentation Laboratory's SABRE project director is Edwin H. Porter, Jr., '52; he has been assisted in management of the project by Kenneth Fertig, '50, technical director; Michele S. Sapuppo, '52, in charge of accelerometer development; and William G. Denhard, '42, director of gyroscope development.

The work at Instrumentation Laboratory has been in progress since 1957; the Bendix Corporation, Northrop Corporation, Sperry Rand Corporation, and Boeing Company have been working with M.I.T. under Air Force contracts.

Documentary on Educational Reform

The 1966 M.I.T. Alumni Seminar received the unique compliment of stimulating publication of a new book, *Curriculum Improvement and Innovation* (Cambridge, Mass.: Robert Bentley, Inc., $8.95), a documentary record of efforts by Educational Services Incorporated and others to improve school and college education in America and overseas.

The editors, W. Ted Martin, Head of M.I.T.'s Department of Mathematics, and Dan C. Pinck, Deputy Director of ESI, drew from many previous publications to provide a broad review of ESI projects and a few related activities which have had a "profound effect" on the curriculum reform movement.

In his introduction to the book, M.I.T. President Howard W. Johnson points out that every great university must achieve "compatibility between the development of its own educational environment, and the contributions it makes to the environment outside the campus.

"Educational reform is a major concern of the M.I.T. Faculty," he wrote, "and it has resulted in massive experimentation and beneficial results in the development of new methods and approaches to teaching, both within and without the Institute."

Eighty-four members of the M.I.T. Faculty have, at one time or another, worked on ESI programs, and 14 of them are authors of one or more chapters of the new book. Most of the book is drawn from previous issues of the *ESI Quarterly Report* (unfortunately without editing to indicate the time sequence of various ESI activities), of which it will be a useful and lasting summary.

The work described includes the familiar and very important physics curriculum revision of the Physical Science Study Committee, in which ESI received its first impetus; elementary school physics programs developed by ESI; science materials for junior high schools; ESI's social studies and humanities program and the social science sequence in the Newton High Schools, not directly connected with ESI; work on mathematics curricula for elementary and secondary schools; ESI's efforts to assist in the education of disadvantaged schools; and a number of projects on college and university teaching, including fluid mechanics, semiconductor electronics, and work at the M.I.T. Science Teaching Center; and overseas education projects in India, Africa, and elsewhere.

The volume concludes with four essays on curriculum reform by Jerome S. Bruner, Director of the Harvard Center for Cognitive Studies; Jerrold R. Zacharias, Institute Professor at M.I.T. who is ESI's Director for Academic Affairs; B. Alden Thresher, '20, Director of Admissions, Emeritus, M.I.T.; and Dr. Gardner C. Quarton of the M.I.T. Neurosciences Research Program and Harvard Medical School.

Eyewitness to Terror

The shadow of a "reactionary military clique" which hangs over academic life in Argentina became a reality during the summer of 1966 for Warren Ambrose, Professor of Mathematics at M.I.T.

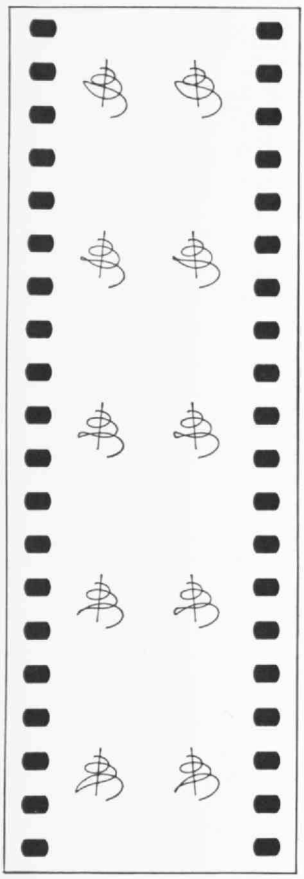
Press accounts described his brutal beating on July 29, with other members of the University of Buenos Aires faculty, by the Argentine federal police following an Argentine government decree bringing the national universities under government control. The decree cited the university, apparently with some justification, as a

On faculty: "Some measure an organization by its facilities: I measure it by its men. . . ." On education: "Education today is as much a preparation for keeping up with the future as for being immediately productive. . . ." On research: "I hold that an educator who does no research is as much out of place in a true university as a researcher who does not teach."—HUNTER ROUSE, '29, in his first statement to the faculty of the College of Engineering at the University of Iowa after his selection as dean.

Report from

BELL LABORATORIES

A 3-D Glimpse of the Hearing Process



THE MOVIE shows the basilar membrane as a "stereo pair" of spiral lines. The sequential frames shown here represent the motion of the membrane responding to the sound "oo" in the word "too" as pronounced by R. C. Lummis, one of the scientists responsible for the film.

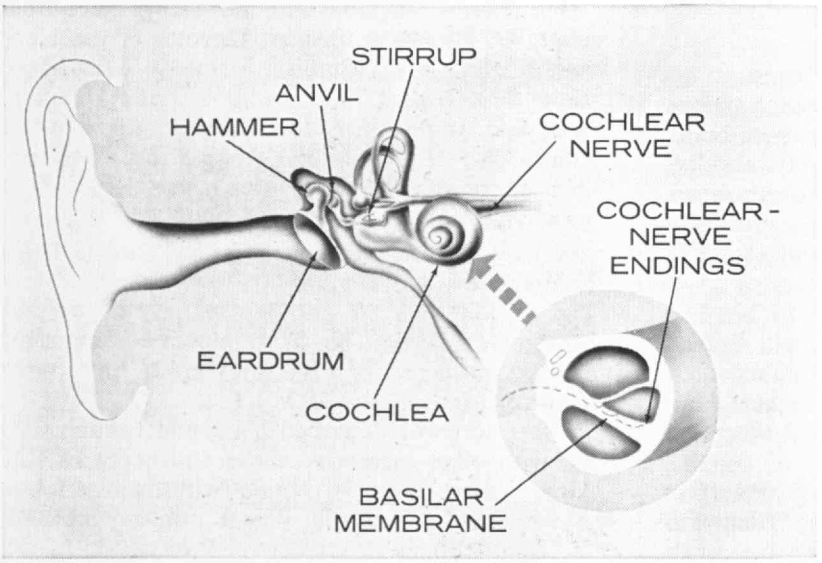
To view this illustration in 3-D, place a sheet of paper on edge between one stereo pair. Position your head so each eye sees only one image. The pictures should then seem to converge and appear three-dimensional.

For screen projection, polarized light and polarized eyeglasses are used to obtain a 3-D image.

THE BASILAR MEMBRANE is a lengthwise partition in the spiral, fluid-filled cochlea (figure). Sound, from the eardrum by way of the hammer, anvil, and stirrup, produces vibrations in this membrane. The end nearest the stirrup resonates at the highest audible tones (approximately 20,000 Hz); the end near the apex of the spiral resonates at the lowest (approximately 20 Hz).

The cochlear nerve terminates near the membrane and, by sensing the vibration at each point, converts the mechanical motion into nerve impulses which the brain perceives as a sound.

Because of its filtering and analytical functions the basilar membrane is a center of interest in hearing research. Since it is embedded in the skull, direct study is extremely difficult.



At Bell Telephone Laboratories, basic research in voice communications does not end with telephone equipment. For instance, three scientists here have made a stereoscopic motion picture showing how the ear's principal transducer—the basilar membrane—moves in response to sound.

A number of steps were involved: First, equations describing the membrane's response were converted to digital form, suitable for machine computation. Next, a program was devised so a computer could determine the precise motion of each point on the membrane as a function of any complex sound input. Finally, the resulting data were processed with another program which introduced the parallax effects inherent in binocular vision.

The output was a series of pairs of stereoscopic images. The computer drew these on the face of a cathode-ray tube where they were automatically photographed to form the frames of the movie.

In this film, the membrane's movements (actually microscopic) are greatly enlarged and slowed down for detailed examinations. Thus we have developed a promising tool for the study of hearing. For example, movies made in this way could help us evaluate theories of the basilar membrane's role in converting sound to nerve impulses. (Several complex mathematical relationships have been proposed; now we may see them in simulated action and measure their properties.)

The scientists who made this film are Robert C. Lummis, A. Michael Noll, and Man Mohan Sondhi. The membrane-response equations from which they began were originated by James L. Flanagan, also of Bell Laboratories. His work was based on anatomical measurements made by Nobel laureate Georg von Békésy of the University of Hawaii.

Bell Telephone Laboratories
Research and Development Unit of the Bell System

staging ground for communists among both students and faculty.

Professor Ambrose, on leave from M.I.T., had been at the University of Buenos Aires since March. He had also served on the university faculty in 1948 and 1964, found a general improvement in the university during this 18-year period; he describes it in 1966 as "a very agreeable place to work, with good students, good courses, much interest in research, and a generally live and stimulating spirit." This improvement has been made possible, he says, by the autonomy of the universities (each had been governed by a directing council of faculty, students, and alumni) which has permitted them to resist harassment of the government. Especially they have been protected from direct action of a parasitic group of military leaders who "have preserved their outdated social outlook and . . . reaction to reasonable social ideals, such as those of the people in the universities, with hatred and brutality," he said at a press conference shortly after his return to M.I.T. in August.

Professor Ambrose joined his Argentine colleagues on July 29 at a university meeting at which the rector and 10 deans of the university voted to resign rather than accept the decreed government control. The police broke up an informal after-meeting gathering with tear gas, marched faculty (including Professor Ambrose) and students out of the building under force of heavy blows, and jailed the faculty for at least four hours, the students for longer.

Since his return early in August, Professor Ambrose has been urging help from American teachers for their Argentine colleagues. An open letter to the Argentine government, for which he solicited signatures, points out that "the destruction (of the Argentine universities), through the removal of their freedom by placing them under government control, is a strong blow against all the citizens of Argentina." And he has been a moving force behind a quiet drive to find U.S. jobs for hundreds of professors and graduate students seeking to leave the country in protest against the military regime; more than 500 professors and an even larger number of teaching assistants are said to have resigned since the July 29 seizure of control.

General Education

(*Continued from page 27*)

lectuals and Social Change," and "American Values of the 1920's."

Other innovations at M.I.T. began about 15 years ago in combined programs of Science or Engineering with economics, humanities, and now political science. These curricula build on the science and humanities base of the first two years at M.I.T. (a strict scientific and humanistic demand) and then are pursued as balanced study or as concentrations generally leading to graduate work.

Humanities (History, Literature, Philosophy, and Music) form the newest major at M.I.T., joining Archi-

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General Education

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tecture and Design, Economics, and Political Science, and Management as science-based concentrations. This curriculum is at once a step forward in the development of education at M.I.T. and an innovation in liberal arts curricula in the United States.

One more innovation in "general education" at M.I.T. has been conducted in the last seven years as an experiment with seniors in what has been called "high-level interdisciplinary general education"—a large mouthful to describe the Humanities Senior Seminar of Course XXI. In this seminar the effort is made to bring the student's experience in science, engineering, *and* humanities to bear on a single large problem under the guidance of professors from several disciplines of the Institute and usually with a visiting professor in addition.

Since the inception of the Course XXI Senior Seminar, students and teachers have put their minds to Revolution and Romanticism; The Royal Society and Scientific Organizations Past and Present; The Nature of Man; the Morality of Knowledge; the Impact of the Civil War on American Thought and Institutions. Now we are engaged in the study of Time as it is conceived of and used in Science, Philosophy, and the Arts. Members of our Humanities staff and a visiting poet and composer will join with colleagues in Physics, Biology, and other fields to probe Time.

Beyond this experiment I believe that there is a need for an important Institute-wide development ahead, in bringing scientists, engineers, humanists, and social scientists together in courses and seminars for seniors.

It would be a mistake to think that general education is confined to the classroom, and especially to the study of humanities or social science or to popularizations of science and engineering. In nature as in science and engineering, examples of order and disorder abound; also what seem to be laws to some are still questions to others.

Every sensitive teacher in this scientifically and technologically oriented community faces the problem of man's place in his society and his use of his achievements. Every teacher at M.I.T. can have no higher goal than to try to bring man's thoughts and abilities, and man's machines closer to man's aspirations.

Professional Education

(Continued from page 32)

interesting developments in professional education today is mid-career schooling. This began in the business schools and is spreading rapidly. At M.I.T. we have the Sloan School of Management programs for junior and senior executives, the new Center for Advanced Engineering Study, and a host of one- and two-week summer courses. The larger companies—General Motors, General Electric, I.B.M., to cite only those I have lectured to—run training programs for their own execu-

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Professional Education

(*Continued from page 49*)

tives. The American Bar Association has a Committee on Continuing Legal Education which runs week-long, weekend and day seminars on new problems in the law. The medical associations, national, state, and specialty groups, conduct study sessions of varying length in new techniques, medicines, specialties.

Mid-career education presents serious teaching problems. The engineer returning to the Center for Advanced Engineering Study, or the young executive enrolled in the Sloan Fellowship Program at M.I.T., is likely to need preprofessional brushing up before he can handle the material taught in professional subjects. The Sloan Fellows' beginning experience is a summer term spent in a specially designed course which gets them up to first-year graduate speed for the regular year. The Center for Advanced Engineering has had to design and give special subjects in modern calculus and quantum mechanics. This preprofessional teaching, I can say from experience, has its own special rewards for the teacher, because the students have a fresh point of view, a capacity to relate theory to real situations in a way that the undergraduate and regular graduate student cannot do. But here is another special job of teaching, and that is expensive.

Mid-career education is expensive for the university, for the student (who must uproot his family for the time) and for his company, which normally pays both his salary and tuition charges. Its great contribution is not the correction of obsolescence, though this has importance. The real point is to give an opportunity in today's complex world for a man who has worked his way through one field, and demonstrated his capacity, to introduce a slight shift in orientation and train for wider responsibilities. It used to be that only the armed services were wise enough to see its desirability and budget for the expense of training at all stages of a successful career. The State Department has long had a program of sending individuals to do a year of graduate work, and is now beginning to operate its own Foreign Service Institute course of six months. It seems inevitable that government, industry, the learned professions and, above all others, university instructors must count on continuing education and re-education in a world of changing knowledge and maturing people.

This mid-career training need not be undertaken by the universities. The costs of adding to the diversity of the multiversity are high. It is more cheaply done without uprooting families. And yet there is benefit in bringing people from different companies, backgrounds, and experience to rub elbows, in plunging the man of affairs back into the scholarly environment. The profit is mutual, so long as mid-career trainees do not overwhelm the academic tradition. There are obvious limits to how far universities can respond to the demand. If mid-career education grows, as is likely, it is reasonable to expect the development of new institutions which

(*Continued on page 53*)

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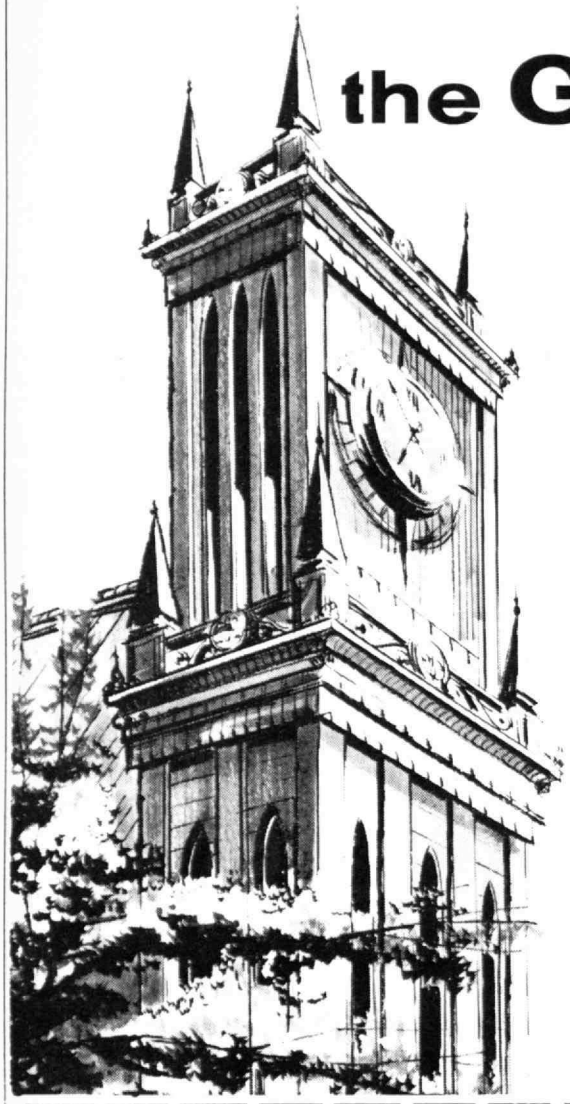

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Professional Education

(Continued from page 50)

provide the specialized preprofessional training and mix students from different backgrounds.

No pat series of answers emerges from a discussion of professional education. I feel confident in rejecting a number of proposals for major reform. Starting professional studies earlier is undesirable insofar as it cuts general education on the one hand and closes off options for late deciders on the other. Eliminating the doctoral dissertation, or converting it to a longish paper representing a couple of months' work, abolishes the vital test of whether a man can organize and carry through a substantial research project, a test of increasing importance in a world where the distinction between research and practice is narrowing. Dividing the university into divisions for general education and professional training not only misses the point that the same treatment of a subject can be preprofessional, general, or professional education for students with different abilities, backgrounds, and programs, but divides the faculty into elite and non-elite members in a way which subverts morale and harms the teaching mission of the university. How to improve the university's performance in discharging the mission of general and preprofessional teaching remains an imposing challenge. Social science is a long way from ability to change value systems, and the real solution to the problem of undergraduate teaching is to restore the prestige accorded to non-professional teaching in the value systems of university staffs.

We have come a long way in American education, I believe, when we recognize that we have serious problems of what, when and how to teach and are prepared to modify the traditional system and to experiment with new techniques. The exact character of the new techniques may be less imporant than the attitude that the subject is important and that present conditions can be improved.

My basic conclusion is the trite one: professional education is a vastly different process than providing a young man with a hatful of formulas and training him to select the right one for the right occasion. The real task is to teach—if it can be taught, or by example to train—the young to attack a problem as a good experimental physicist, biologist, engineer, or economist would; to have a feel for the data and for the limits of standard analytical techniques; to sense, after a time, the distinction between the run-of-the-mill textbook case and that with new and puzzling complications. It is not enough to do what a professional does; one must think the way a professional thinks. And this capacity is communicated in a complex osmotic process which may be independent of or only very loosely connected with prerequisites, examinations, credits, and theses, much less closed-circuit television, teaching machines, computers, and high-powered mathematics. The educational process is an elusive one, but I venture to pre-

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Professional Education

(Concluded from page 53)

dict that in the long run it will be found to resemble more the chemistry of slow-cooking on the back of the stove than that of infrared split-second broiling of steaks from the deep freeze.

Vocational Education

(Continued from page 36)

what is known about fundamentals of the hard or soft sciences. In general, such things as applied science, applied mathematics, and applied political science are necessary but not sufficient. It is hard to understand why we have not long ago organized for educational ends so many of the things that have fashioned in large measure the working tools and competences of people who get things done. This is the domain that lies between the raw doing of things by rule of thumb and the employment of knowledge gleaned from academic education. This is the area that combines fundamental knowledge, a good deal of empiricism, know-how, judgment, intuition and experience, all of which must be put into the melting pot if one is to fashion a really workable, useful and practical product. Without the mix of all these ingredients the result will almost always be less than satisfactory.

In medicine one sees perhaps the clearest recognition of this area as a field of learning. The concern of professors of clinical medicine is to organize and teach this body of knowledge. There is but little doubt that no one would trust his health to a doctor whose sole source of knowledge lay in the output of medical research laboratories, the fountainheads of fundamental medical knowledge, and who had no other learning experience. Clinical practice and clinical knowledge must be added.

Engineers must be similarly equipped to function effectively; they are quite different from applied scientists or applied mathematicians—at least the good ones are.

In the practice of politics it is manifestly clear that more is needed for success than the knowledge obtained from even the best books or university courses on political science. One must face squarely the fact that the real challenge of the future calls for the organization and codification of this "clinical" body of knowledge so that it can be used for teaching youngsters.

It is increasingly difficult to acquire such competence from raw working experience. I submit that this body of knowledge and the concomitant learning experience, which one may call the acquisition of knowledge leading to clinical competence, should be central in all of education for occupational ends if rapidly changing future needs are to be coped with successfully.

This proposition that experience, empiricism, and judgment, synthesized skillfully with fundamental knowledge, are vital in molding clinical competence makes it clear that vocational education has inherently

(Continued on page 56)

How dull if everybody who joined us had the same aims, color, and interests!

The guy who wrote what you are reading joined the company as an optical physicist. Now he's an advertising man. His assistant, an English and French major from Catawba College in Salisbury, N.C., who first joined our French affiliate, Kodak-Pathé, in Paris, has just written a manual in English that introduces beginners to a system of separations chemistry for which we market equipment and supplies. Her husband works in our Photographic Technology Division engineering color motion-picture processing systems. (Four other departments tried to lure him away, but he decided he preferred the exciting new development work in his area.) The chairman of our board also came originally as a physicist, the president as a mathematician, one of our two executive vice presidents as a chemical engineer, the other as a Ph.D. chemist. On the other hand, our vice president of marketing majored in economics at the local university.

The point: out of self-interest, pure and frank, we have to help every college graduate who joins us find where he is happiest and can therefore earn raises fastest. What makes this a little easier here for both parties is our tremendous scope.

Having long been part of many, many more industries than the one with which the general public identifies us, we operate in technologies that range from optics to cattle nutrition, from knitting to laser-cavity design. Perhaps more significant to the person choosing an affiliation for the long haul, we have room and need for every shade of personal bent. In most people personal bent is still to be discovered at the time of college graduation.

The general public knows us for snapshots and home movies. We like it that way. Actually, 72% of our sales comes from elsewhere.

One makeup is tuned for avid pursuit of better understanding of the physical world, whatever the purpose. He can enjoy himself here. Another will enjoy himself here far more in tough competition to create demand for the ultimate fruits of the first fellow's studies. One technical talent finishes what the other technical talent starts. To man the long line between them, we need just about every other honest talent, technical or non-technical, male or female, all creeds, all colors. That's how broad we are.

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Vocational Education

(Continued from page 54)

much to contribute to this kind of learning, perhaps even more than academic education. It was not too long ago that the adage, "That's all right in theory but it just won't work in practice," had widespread validity. But the changes which have taken place and will continue to gather momentum are effecting a shift of practice from a largely empirical to a largely scientific base. This, however, does not mean that the need for empiricism, for judgment, for feeling things in one's bones has disappeared, nor will it in the foreseeable future. It simply means that the role which scientific and basic understanding plays in judgment-making has grown enormously since the turn of the century. The waste of human effort and the frustration of many ingenious people trying to invent perpetual motion devices attests to the indispensability of fundamental knowledge in attaining practical success.

Thus we emerge with the thesis that neither vocational education—the doing of things—nor academic education—the mastery of man's accumulated knowledge—alone can provide what is needed for occupational competence. We have to find a way of pooling the resources of both and of bringing them into confluence so that they both contribute meaningfully to the end result. To be effective, a youngster will have to be drawn from the challenge of doing something to the learning of academic disciplines and then to feeding back the results of that learning to the realities of his original clinical activity. It probably will be more difficult for the student who starts from the academic end, but certainly he will be sadly short-changed in his quest for clinical competence unless an integral part of his learning experience comes from ingredients of vocational education. There should be some aspects of vocational education in the learning experience of all students; but, of course, the relative amounts of vocationally and academically derived education must differ to match the characteristics of different students.

The Growing Focus on Control and Responsibility

There still remains the question: What sort of occupational or career competences will be required in the future? It is evidently impossible to predict in terms of classifications of jobs, even in the broadest sense of the term "jobs," just what society will need 20 or 30 years hence. But it is possible, if one looks at the general pattern of changes in human activities over long time periods, to anticipate general trends and emerging broad changes. The history of man's development is intimately related to his talent in creating and utilizing tools. First, simple hand tools were fashioned to assist his muscles in getting jobs done; then the taming of animals enabled him to utilize muscles other than his own to do physical work; next followed his efforts to utilize energy sources other than muscular, culminating in the great advance in the industrial revolution where sources of energy far greater than those available from animal organisms

were brought to bear on the doing of things. This latter development brought with it increasingly difficult problems of control and judgment. The role of the human ceased largely to be that of one who pushes and pulls with his own muscles and became that of one who must control for effective use something else, animate or inanimate, that does the work. With inanimate energy sources the control problems became complex and critical, since such sources were rich enough to cause great damage if they got out of hand. In the early days of machinery there was a large amount of manual control; then followed the development of semi-automatic control and finally the emergence of fully automatic control. A fully automated operation is characterized by the feedback of information from the output to control the input and insure the stability of the operation.

Over the past few decades there has emerged a new and highly significant advance in this story of man's development. This, of course, lies in the development of computers and the manifold and ingenious ways in which they are put to use. Computers and similar devices will increasingly relieve man of mental drudgery, just as machines have relieved him of physical drudgery. This forecasts changes in the functions that humans will perform in getting jobs done; there is no longer need for accountants to develop the skill of rapidly and accurately adding long columns of numbers, nor will there be a need, for much longer, for large numbers of draftsmen to do what computer-aided drafting and design will do for production. And there will be a steadily increasing number of technological aids in almost every occupation and human activity.

Occupational needs and requirements will consequently undergo marked changes. There will be an increase in the function of assuming responsibility; people will have to be prepared to assume responsibility—in varying degrees, of course, depending on their capabilities—for the performance of machines, systems, processes and operations. The primary human function will be that of seeing to it that systems operate well, rather than that of participating directly in the operation itself. People will generally have to design, operate and control, rather than participate as active components of working systems, whether such participation is manipulative or otherwise.

It is evident that the character of education for occupational competence must correspondingly change. Higher and continuing education must be a goal for all, and higher education implies a far broader spectrum of learning than that attainable in conventional college and graduate education. The relatively monolithic character of most of current educational practice cannot hope to provide the diversity of learning experiences that are required by different individuals. In adding new routes to higher education, we must be concerned with all the capacities of an individual, including the intellectual, the manipulative, the creative and the social. To bring these into being, the values inherent in vocational education must enter into meaningful partnership with those of academic education.

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An Institute Gazette

A Crisis in Housing

"M.I.T.," said *The Tech's* second editorial this fall, "is fast becoming a nice place to visit where nobody would want to live."

Four factors have contributed to a growing shortage of housing for M.I.T. students which this fall has reached crisis proportions, according to Kenneth R. Wadleigh, '43, Dean of Student Affairs:

1. There is a sharply increasing demand for housing in M.I.T. dormitories from students whose counterparts in previous years have preferred to live off-campus.

2. Student populations are increasing, undergraduates slowly, graduates rapidly.

3. The fraternity system remains strong—but not strong enough to upgrade fraternity housing or even in some cases to cover the depreciation of fraternity real estate.

4. Slow degeneration of some residential areas around M.I.T. and sharply increased rents in a "seller's market" have together reduced the number of suitable off-campus accommodations.

Dormitories

Several temporary expedients have been used to help meet the demand for dormitory space this fall. Despite anguished outcries of the Graduate Student Council, two floors of Westgate, the married students' apartments, have been converted into a temporary annex to McCormick Hall for 32 undergraduate women; a new addition to McCormick Hall will be ready by 1968. A new apartment house on West Street, near the Cambridge City Hall beyond Central Square, has been leased by M.I.T. to serve as a dormitory for 42 undergraduate men. Several lounges in Baker House have been converted into triple rooms; and all the single rooms in the East Campus Houses occupied by freshmen have been temporarily made into doubles. In all, the dormitory system has been stretched to accommodate 100 more students this year than last.

No relief is in sight until the completion of MacGregor Hall, a new men's residence planned for the West Campus on which final drawings are now being prepared. Even then, the new capacity will simply provide substitute accommodations while present dormitories are remodeled.

On the positive side, Dean Wadleigh reports, is the further extension of the House Master and Faculty Resident system in the dormitories. John W. Irvine, Jr., '39, Professor of Chemistry, has been named Master of Ashdown House, succeeding Frederick G. Fassett, Jr., who is on leave this year. And Prescott A. Smith, '35, Associate Professor of Mechanical Engineering, whose father was the late Robert H. Smith, a member of the Department of Mechanical Engineering from 1886 to 1933, has been named Faculty Resident in Bexley Hall, undergraduate men's dormitory. C. Duncan MacRae, Assistant Professor of Economics, has been appointed senior tutor in Baker House.

For the first time this year, Dean Wadleigh reports, every undergraduate dormitory and most fraternities have graduate students residing as tutors.

Fraternities

Meanwhile, 75 per cent of the freshman Class of 1970 attended Rush Week in September, and a record number of 364 students (42 per cent of the freshmen) were pledged to local chapters. Rush Week was operated with aid of IBM data-processing this year; the system was devised to help the fraternities keep track of rushees as they moved from house to house and as they finally made their choices.

Boston's Back Bay, where most M.I.T. fraternities are located, is an area of turmoil. What used to be a stronghold of sedate Boston has been taken over gradually by students. There is an irresponsible student element, and it is hard for the responsible fraternities to distinguish themselves from it.

The charming old brownstones which most fraternities occupy are rapidly losing a good deal of their charm; most of them were built 70 to 100 years ago, and many have had little in the way of renovation since that time. Phi Kappa Theta is an exception: a massive remodeling job, at a cost of over $100,000, has just been completed (with aid of the Institute's Independent Residence Development Fund) to the 80-year-old building.

Theta Delta Chi, moved from its Memorial Drive (Cambridge) house to make way for the extension of McCormick Hall, this fall purchased Moore House, formerly occupied by the dean of residence. The move was made possible by I.R.D.F. aid and a special fund appeal to Alumni of the chapter; but house bills are now up to help pay the expenses, too.

Off-Campus Housing

Off-campus housing also presents more than its share of frustrations. "The truth is," says *The Tech's* editorial, "that even with the considerable help of the Community Housing Service, it's almost impossible to find a decent and still not outrageously priced apartment in Cambridge."

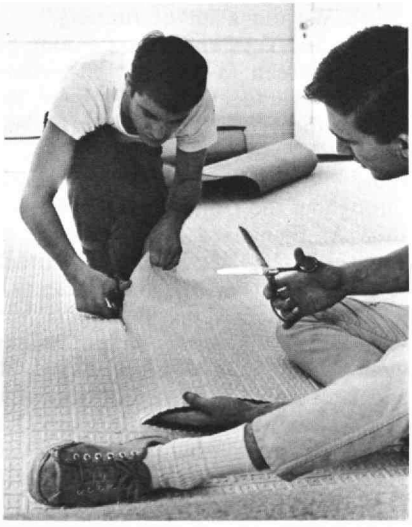
From January to mid-September, more than 5,700 people asked for housing help from the Institute-sponsored Community Housing Service, under the direction of Mrs. Eugene E. Covert; 1,315 of them came in August alone. There are lists of accommodations available, of course, and a roommate-finding service has been a logical outgrowth.

"A Wellspring of Audacious Advance"

A record number of over 400 officers of alumni clubs, classes, and the Educational Council were M.I.T.'s guests for an intensive two days of workshops and orientation at the 1966 Alumni Officers' Conference on September 9 and 10.

James R. Killian, Jr., '26, Chairman of the Corporation, told them that

The finishing touches: two members of Theta Delta Chi pitch in to help make the fraternity's new house ready for Rush Week.



Registering: Gregory Smith, '30, the chairman of the 1966 Alumni Officers' Conference, picks up his credentials in Kresge lobby.

The M.I.T. Alumni Association honored four members and one class during the 1966 Alumni Officers' Conference by giving them "Bronze Beaver" awards. The winners (left to right): Robert S. Faurot, '44, Robert W. Forster, '35, Joseph W. Barker, '16 (who is receiving a Beaver for the Class of 1916 from Theodore A. Mangelsdorf, '26, President of the Alumni Association), Gilbert H. Lewis, '51, and Oscar H. Horovitz, '22.

An Institute Gazette

M.I.T. is "an institution in which the innovative spirit is steadily renewed. It must always be a pathbreaker and a wellspring of audacious educational advance. Because of its special nature the Institute must be constantly adaptable to changing needs, always closely in league with the future."

Dr. Killian, reviewing recent gains at the Institute "so much of which are attributable to the leadership, hard work, and generosity of our Alumni," cited new developments in undergraduate curricula, the development of project laboratories, the growth of scholarship funds ("for the first time the Institute is not at a disadvantage with respect to the scholarship funds it has available for its undergraduates"), increasing faculty salaries, improvements in the living environment of students, the development of research funds under the Institute's control, and the creation of new buildings.

The successful completion of the Second Century Fund has been followed, he said, by a marked increase in the annual gifts to the Institute, and especially he cited the "spectacular" increase in the Alumni Fund and in the reunion class gifts.

Other speakers at the conference reported in detail on new curricula for first-year students (Paul E. Gray, '54, Associate Dean of Student Affairs), the M.I.T. environment and the attitudes of students toward it (Kenneth R. Wadleigh, '43, Dean of Student Affairs), and the attitudes toward M.I.T. of prospective students who are admitted to the Institute but decide to study elsewhere (Roland B. Greeley, Director of Admissions). Mrs. Karl T. Compton presented some special reminiscences, published on the opposite page, at the final conference luncheon.

The conference featured discussion of preliminary reports of the Long-Range Planning Committee and seven of nine subcommittees, considering the goals and programs of the Alumni Association for the next decade.

Gregory Smith, '30, Vice-president of the Alumni Association, was chairman of the committee for the conference. John A. Lunn, '17, general chairman of the Long-Range Planning Committee, and D. Reid Weedon, Jr., '41, deputy chairman, conducted a review of the committees' work, and 13 Alumni served as leaders and panelists at workshop sessions: Arthur P. Alexander, '58, Henry Avery, '41, Harry E. Essley, '36, Robert S. Faurot, '44, William C. Howlett, '49, Robert M. Ilfeld, '44, James K. Littwitz, '42, William H. MacCallum, '24, Theodore T. Miller, '22, Wilcox P. Overbeck, '34, Philip H. Peters, '37, Stanley M. Proctor, '43, and Howard Richardson, '31.

The M.I.T. and the Icelandic national basketball teams join for luncheon during the M.I.T. team's 10,000-mile 26-game summer European tour.

PHOTO: DAVID W. ALTMANN, '68

Summer Sports

M.I.T. athletes took no summer vacations.

• Under the auspices of the People-to People Sports Committee, 14 members of the M.I.T. varsity basketball team played a 26-game, 10,000-mile exhibition tour of Europe in August and September, ending with a 14-12 winning record. The tour included a single game in Iceland with the Icelandic national team, two games in Luxembourg, 17 games in Yugoslavia (including the national team) in 25 days; and six days in two tournaments (in one of which they tied for first place) in Greece.

"The Yugoslav players are the best in Europe," Coach John G. Barry told Larry Strum of the Boston *Traveler* when the tired team returned. "We seldom played against a team that didn't have a 6-10 or seven footer. They clear the ball right off the boards and up court. We did a lot of running."

• Four M.I.T. Alumni were among 36 rowers chosen at national championships in Philadelphia to represent the U.S. at the World Rowing Championships in Yugoslavia in late August. The four, who will later tour with the team throughout the United States, were Arthur A. Blanchard, '66, Seymour L. Cromwell, 2d, '61, Robert L. Sandel, '64, and John R. Schilling, '65.

• Sailing Coach Joseph R. Duplin won European and North African sailing championships in Sweden in August and later sailed (and nearly won) the world championships in Germany. He began the summer by winning the Ned Hay Memorial Trophy sailed off Rockport, Mass.

• Terry L. Cronburg, '66, representing M.I.T. and the Intercollegiate Yacht Racing Association, took second place in the North American Single-Handed Sailing Championships at Annapolis; his 157 points compared with the winner's 170.56. An "interesting incident" in the second race was described by the Baltimore *Sun:* "Cronburg, who has a unique hiking technique which practically puts all but his big toe outside of the boat," slipped overboard. But he recovered and placed seventh in the race, his poorest showing of the 10-race series.

Fall Sports

M.I.T. varsity athletic teams were scheduled for 39 contests this fall, opening on September 25 with the Coast Guard Invitational Sailing Regatta at New London. Soccer prospects looked good, with 14 lettermen returning, and cross-country "might not be so dim this year," the press sheet said. Competitions in November include:

In Cambridge:

November 1: varsity and freshmen in the Greater Boston cross-country championships.

November 3: junior varsity soccer vs. Boston University.

November 5: varsity soccer vs. University of Connecticut.

November 5 and 6: varsity sailing for the Schell Trophy.

November 7: varsity and freshmen in the New England cross-country championships.

November 11: varsity sailing for the Oberg Trophy (at Northeastern).

November 13: varsity sailing for the Staake Trophy (at Tufts).

In New York:

November 14: varsity and freshmen in the national intercollegiate cross-country championships.

In Exeter, N.H.:

November 2: freshman soccer vs. Phillips Exeter Academy.

In Storrs, Conn.:

November 5: freshman soccer vs. University of Connecticut.

In New London, Conn.

November 5 and 6: freshman sailing for the Priddy Trophy at the Coast Guard Academy.

November 12 and 13: varsity sailing for the Fowle Trophy at the Coast Guard Academy.

Achievement Recorded

Two records were set by the 1966 M.I.T. Alumni Fund.

Total gifts were $2,210,356, up $618,112 from the record-breaking 1965 figure.

The total came from 16,272 contributors, 590 more than gave in any previous year.

Philip H. Peters, '37, chairman of

A Crescendo of Fulfillment

The stern majesty of science gives M.I.T. a special mark

By Mrs. Karl T. Compton

It so happens that I have had an opportunity to know quite intimately a great many kinds of colleges and universities—from the enormous state universities of the Middle West (from one of which I graduated) to the small church-related liberal arts colleges, to schools of agriculture and mines of the West, and finally Columbia and Princeton. Each has its value and its place in our heterogeneous social structure, and this diversity is one of the great strengths of the educational pattern of this country. The Institute (as we have become used to calling it) has become a university, a *new* kind that is needed in this country, a special kind of university (to use Jim Killian's pregnant phrase) oriented around science. I have been privileged to watch much of this special character emerge.

One of the first things Karl and I did when we knew we were coming here was to get the two-volume *Life and Letters* of William Barton Rogers to get the background of his thinking as he launched the new institution which was a maverick among educational institutions then. One sentence stayed indelibly in my mind. He wrote, out of the atmosphere of one of the country's distinguished colleges:

"I long for an atmosphere of more stimulating power. College recluses are liable to become in some degree mentally asphyxiated and to avoid this state ought if possible to plunge often into the more oxygenated air of active bustling life."

The day of the recluse on any campus is largely past and Tech has had no small part in helping to bring this about. Through the years as I have watched new ventures, new ideas, there has been a sense of dynamic urgency, a seething creativity which I believe is the essence of sound and real education for today's world.

It seems to me, a nonscientist but one who has lived with joy and admiration among scientists for all of my adult life (and that is a *lot* of years), that too many people, even some so-called scientists, think of science as only a vast body of facts. Of course it is based on the myriad bits of data accumulated by the patient devoted work of thousands of seekers after knowledge, some famous, more also essential to the process, but unknown. But science is more than its foundation of facts. It is a way of thinking that the world desperately needs in *all* of its affairs. Science I think has an inevitable, stern integrity built in to its very nature. It is self-corrective, continually self-critical and demanding. And however much the concern here reaches out to cover the whole wide sweep of man's intellectual concerns—economics, poetry, philosophy, art, anthropology religion—*all* properly and necessarily part of a young person's experience if he or *she* is to be an educated person, still I feel strongly that it must indeed continue to be oriented around science. I believe we should be sending out, not only scientists and engineers but more profound practitioners in law, in literature, in art, in religious leadership, because they have *had* this contact with the stern majesty of science. We must produce graduates whose minds bring the crystal clear integrity, the wide sweep, the on-going-ness of science to whatever field of professional activity later engrosses them.

You who represent Tech across the country must see beneath and beyond the external evidences of growth, buildings and courses in your presentations both to prospective students and potential donors, even to worried parents. You must catch something of the vision that William Barton Rogers had, that Richard Maclaurin gave his life to implement, that Karl and Jim Killian and Julius Stratton each with his own special excellence have brought to a crescendo of fulfillment in these recent years.

I feel here like a great, great grandmother now that three generations of presidential regimes have followed our at first very scared beginning at Tech. I have followed with grateful delight the fulfillment of many of Karl's hopes, and with tremendous admiration the opening up of undreamed-of new vistas for the future.

It was said long ago: "Your old men shall dream dreams and your young men shall see visions and yea on my servants and on my handmaidens in those days I will pour forth my Spirit and they shall prophesy."

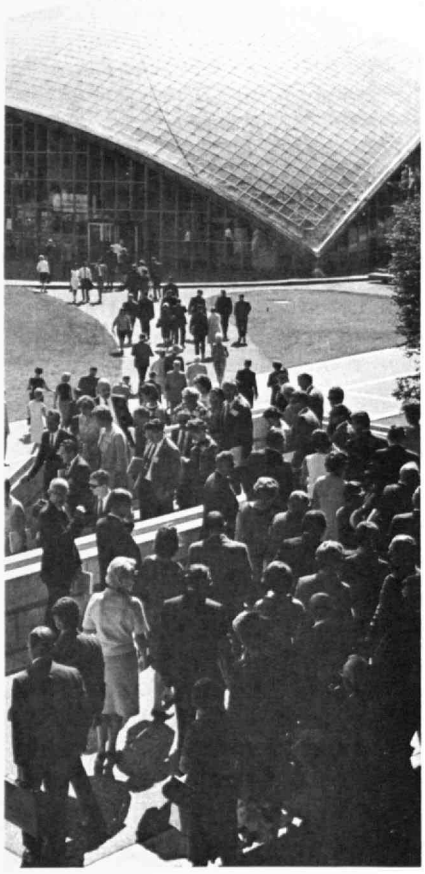
An Institute Gazette

the 1966 Alumni Fund Board, announced these figures in an annual report mailed to all Alumni early in the fall. They are "an inspiring witness to alumni loyalty, a manifestation of alumni understanding of M.I.T. and its need to maintain its position," he wrote.

The totals included gifts of $128,019 to the Independent Residence Development Fund, bringing the total of this fund since its inception in 1964, to $250,000.

The largest Alumni Fund contributions, not including those of major reunion classes, came from the Class of 1922, 44 per cent of whose members gave a total of $124,144. Two non-reunion classes, 1905 and 1911, tied for highest participation at 65 per cent. Of 235 Phi Gamma Delta Alumni giving to the Alumni Fund, 93 designated their gifts for I.R.D.F., the largest number of any M.I.T. fraternity.

Like any other students, members of the 1966 Alumni Seminar studied special exhibits (by Educational Services Incorporated) and hurried between classes (from the Student Center to Kresge Auditorium).



An Immersion in Learning

"The whole society will have to become more concerned with the meaning of learning for everybody," Professor Elting Morison told the 1966 Alumni Seminar members in his keynote address.

But their very presence at the seminar made Professor Morison's dictum redundant for the 300 Alumni in his audience. For they had come to M.I.T. for the three-day Alumni Seminar in problems and opportunities of education at all levels which took them into a totally different world of academic involvement.

Discussions at the seminar ranged from the biological bases of learning to the most practical problems of schools and after-school teaching. There were large exhibits of new educational developments by Educational Services Incorporated and the M.I.T. Science Teaching Center.

Alumni Seminars, said President Howard W. Johnson at the opening luncheon, are an expression of "M.I.T.'s commitment to the broad continuum of learning." Concentration on a single professional activity, he said, tends to narrow interests, limit outlooks; hence the Institute's concern for ways to extend the view of all its students, including especially Alumni. To study in detail M.I.T.'s present and future commitments for this kind of "adult" education, President Johnson announced the appointment of Walter A. Rosenblith, Professor of Communications Biophysics who was chairman of the 1966 Alumni Seminar, to head a special Faculty committee on continuing education.

These are a few highlights of 1966 Alumni Seminar discussions:

- People who most need mid-professional "refresher" courses don't get into the best "retreading" programs; obsolete people are not selected.
- What is the strategy for going about building an organism which can think? Learning and memory occur as systematic phenomena, and the complexity of the system goes up "astronomically" as we approach the study of the human brain.
- The mechanisms of state aid (or state control) of education must somehow be used to influence weak school committees without jeopardizing the brilliance of many excellent systems in Massachusetts.
- However good is the school, it must have a prepared mind. The nature of the student and his family's view of life are influential far beyond the capacity of the school.
- The image of a school is sloping desks; but you cannot *do* anything on a sloping desk. If you want a student to really understand something, you must give him time and the opportunity to *work* with his subject, to get acquainted with it in all its aspects.
- It is perhaps better for a student to understand one thing fully, and in the act to understand the process of understanding, than to be modestly informed on a great range of irrelevant topics.
- New teaching methods and ideas are obviously needed, but there is also the problem of giving teachers conditions under which they themselves can learn about the new methods and experiment with their use.
- The greatest deterrent to the regionalization of schools in Massachusetts is the loss of athletic identity.
- "We do have a man-made world, and I believe we can have it the way we want it. Hence, we must always distinguish between being correct and being right." (Dean Gordon S. Brown, '31).

Honored by Harvard

Among leaders in education receiving honorary degrees last June from Harvard was Howard W. Johnson, then President-Elect of M.I.T. The doctor of laws degree was conferred upon him and Harvard's President Pusey welcomed Mr. Johnson as a ". . . vigorous new champion of education on the Charles."

For Food Research

A $250,000 gift from Stephen P. Mugar will support research in nutrition and the development of new food sources in the M.I.T. Department of Nutrition and Food Science.

The gift was announced at the Gloucester dedication of a new facility for the Gorton Seafood Corporation, where Mr. Mugar pointed out that "mankind can avoid starvation only by intensified study and research on seafood and other proteins. The world looks to the United States," he said, "to help solve mounting food shortages."

In accepting the gift for M.I.T., James R. Killian, Jr., '26, Chairman of the Corporation, told Mr. Mugar that his gift is "important and timely" because scientific research in nutrition

and food technology holds major promise for providing new sources of protein for human food. "With financial assistance such as Mr. Mugar has given," Dr. Killian said, "our Department of Nutrition and Food Science can make further progress in exploring the complexities of nutrition and searching for new and low-cost, protein-rich foods which can relieve some of the pressures on the world's agricultural land."

Mr. Mugar, who is chairman of the board of the Star Market Company, is a generous supporter of higher education in New England.

Technology Tomorrow

Nearly 1,000 Seattle-area residents were guests of the M.I.T. Club of Puget Sound for a day-long exploration of "Tomorrow's Role for Technology" at an M.I.T. Regional Conference on October 29. Six speakers from Cambridge presented special topics during the day, and Governor Daniel J. Evans of Washington and President Charles E. Odegaard of the University of Washington appeared at the conference to bring greetings to the Institute and its Alumni.

Speakers included Secor D. Browne, Associate Professor of Flight Transportation; John E. Burchard, '23, Dean Emeritus of the School of Humanities and Social Science; President Howard W. Johnson; James R. Killian, Jr., '26, Chairman of the Corporation; Frank Press, Head of the Department of Geology and Geophysics; and Irwin W. Sizer, Head of the Department of Biology.

H. W. McCurdy, '22, presided as master of ceremonies at the conference dinner at which President Johnson spoke. Jacob A. Samuelson, '40, headed the Planning Committee.

The conference audience included 450 high school students from the Puget Sound area and 50 of their teachers, arrangements for whom were made possible by the contributions of Seattle business firms employing M.I.T. Alumni.

Publications: Appointments and Kudos

William T. Struble, who has been Managing Editor and Acting Editor of Technology Review since 1964, has been named Director of Publications at M.I.T. He thus rejoins the Institute's public relations activities, to which he first came in 1959 to participate in the WGBH-M.I.T. television program "Science Reporter" and later to edit an M.I.T. science bulletin for industrial executives, *Reports on Research*.

Dietmar Winkler, formerly associated with a Boston design studio, has also joined the Office of Publications staff as Graphic Designer.

M.I.T. publications from the Office were honored this summer with the $500 principal award and nine other citations in the 1966 national competition of the American Alumni Council, announced in July. Fifteen examples of the work of Jacqueline S. Casey and Ralph M. Coburn, '47, Graphic Designers, were published in mid-summer in *Graphis,* widely respected Swiss design magazine; the editors commented that the Institute "confronts its designers with tasks of the greatest variety and challenge," and their work "endeavors to mirror the Institute's own high standards and its forward-looking philosophy."

The President's Days

What kinds of problems give the President of M.I.T. busy days—and sleepless nights?

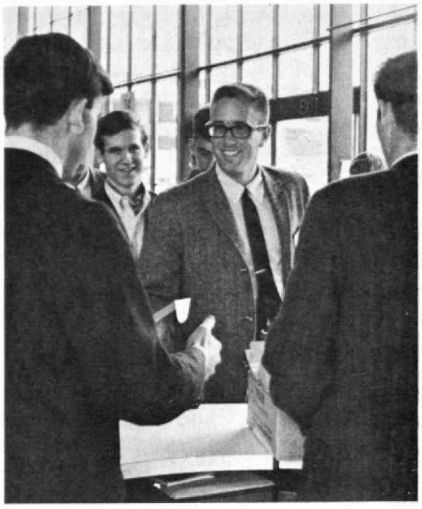
They are problems on M.I.T.'s route toward "an end which no other university has reached in our times," President Howard W. Johnson told more than 500 Alumni and guests at the banquet of the 1966 Alumni Officers' Conference, whose members were joined for the occasion by other visitors who had earlier witnessed the dedication of the Harold Whitworth Pierce Boathouse.

"I think of M.I.T. as an emerging university," President Johnson declared, whose role is to apply our "all-out" concern for human systems in an intelligent way, to keep in balance a dynamic set of conflicting variables, while at the same time pressing for progress in the direction of the final goal—the goal of total and continuous education for the whole man."

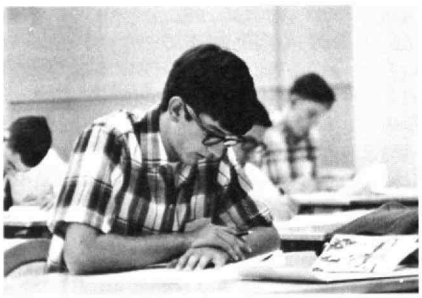
Typical of M.I.T.'s day-to-day problems on its way to this envisioned goal, President Johnson said, is how the present campus can support the Institute's inevitable future expansion. "How can we build and maintain a healthy intellectual and aesthetically rewarding environment in the face of our growth? Will size alone fragment our physical and our intellectual unity?"

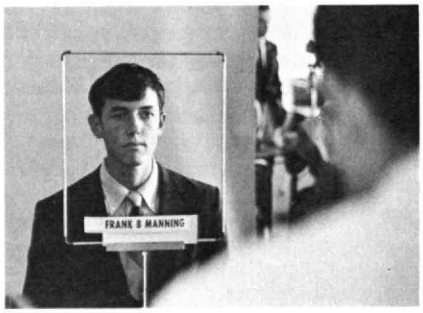
Conflicting demands in the allocation of funds, "always limited and always short of satisfying our numerous needs," are a constant problem on the President's desk. President Johnson typified it by reciting the dilemma of the need for a new computation facility and need to renovate the undergraduate dormitories. Both of these urgent, alternative ways of using funds "would have effects on our campus which we can predict and many more effects

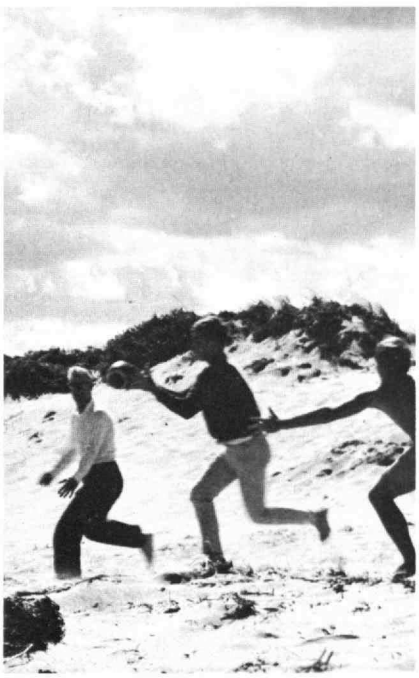
A day in the life of an M.I.T. President was Howard W. Johnson's theme at the banquet of the 1966 Alumni Officers' Conference.



The first five days of '70: Freshman Weekend in September included greetings, tours, tests, pictures, an "activities midway," conferences with advisers, the President's reception, picnics, words of upperclass wisdom, and beach-party football.







which we cannot conceive at this time."

Another (and perennial) presidential problem, President Johnson said, is how to safeguard our students from the "strain and apprehension of the Tech man's obstacle course" crossing Massachusetts Avenue. But this problem, he said, is nearly off his desk. For he announced plans to construct a "simple, elegant" bridge across the Avenue, which, "with good luck and favorable support," should be ready in 1967.

In M.I.T.'s characteristically "frantic" pace, President Johnson said, referring to another presidential problem, "some of the better and finer things of life often give way to a string of 'first priorities' which tend to dehumanize us, to make the Institute a place in which a philosopher and a poet or a composer or an artist would not choose to live." To achieve a more appropriate environment, asked President Johnson, must we lessen the load of Faculty responsibilities in teaching and research, in professional activities? Should we lighten the load of classroom and laboratory work (heavy now "as a result of their high intelligence and high performance") on our students?

The Class of 1970: "Setting Human Powers in Motion"

It used to be easy: every M.I.T. freshman took chemistry, physics, mathematics, humanities, and one of 17 electives in the first term.

Now he has hard decisions to make: in all, the Class of 1970 had more than 70 elective opportunities to choose from in the first term alone, and the five-day Freshman Weekend program in September was a time for heavy thinking.

M.I.T.'s Class of 1970 numbers 935 students, including 49 girls, from 47 states and 24 foreign countries. The class' scores on the College Entrance Examination Board tests were higher than ever before (more than half scored 750 or better—out of 800—in mathematical aptitude, 690 or more in verbal aptitude). Of the class, nearly 200 are high school athletics lettermen and 224 had been on school papers.

"All of you," President Howard W. Johnson told the new class at the opening of Freshman Weekend, "have what it takes to finish at M.I.T., and all but very few of you will." (Out of 7,000 grades given to the members of the Class of 1969 last year, only 130 were failing, according to Paul E. Gray, '54, Associate Dean of Student Affairs.) M.I.T., President Johnson said, promises "a very important, vivid experience, an extraordinarily effective education for a world where change is commonplace, where challenge comes early."

Sixty-three per cent of the new class are receiving scholarships, by far the highest proportion yet at M.I.T. Scholarship aid from M.I.T. to freshmen in 1966-1967 will exceed $500,000, an 89.5 per cent increase over last year. "No qualified student was turned away because of financial need," according to Jack H. Frailey, '44, Director of Student Aid.

The youngest member of the class is Don B. Zagier, 15, of Stockton, Calif. He entered from Winchester College, England, and will probably skip most of the first-year subjects by taking advanced placement tests.

For one of his more typical classmates, however, the decisions about first-year subjects were very real. He could defer freshman chemistry or physics until the second term. If his background seemed weak, he could take a tutorial subject in one of these areas first. He could take his choice of at least 17 "approved" freshman electives, or if he was especially qualified he could make his choice from among many other undergraduate subjects. And he could choose from more than 40 "undergraduate seminars," a kind of tutorial arrangement between four to eight students and a single Faculty member in the field of the teacher's special interest.

Every member of the Class of 1970 made a tentative schedule for his first term before he arrived. So had his Faculty adviser—based on what was in the student's admissions folder, what the freshman had written to the Dean of Student Affairs during the summer, and how he had done on "diagnostic tests" in physics and mathematics given during the first hours of Freshman Weekend.

Then they got together for a final decision. The result was that about 25 per cent of the Class of 1970 chose some "nonstandard" program with either physics or chemistry delayed one term. In 1965, the first year of such broad freshman freedom, 40 per cent of the Class of 1969 had chosen "nonstandard" programs; no one is quite sure why the change this year.

Faculty advisers, who now have a very special responsibility for getting every freshman off to the right start, see their advisees at least twice during Freshman Weekend—once in a group meeting and once individually. Some see some students many more times, and most entertain their freshmen for dinner during the first week or two of school. They hope to keep in touch with all their students throughout the critical first term, but it is not always easy. Some students, says the handbook for advisers, "pass through a

stage where they feel compelled to value a counselor as someone *not* to go to. Even when the relationship develops comfortably and fruitfully, the counselor needs to be patient and to remember that the student needs time before he is free to say what he really feels about his life at M.I.T.

"When this finally happens," says the handbook, "the counselor finds that he has had a real part in setting human powers in motion."

New Head for Physics

Victor F. Weisskopf, a distinguished nuclear physicist who has been Director-General of the European Organization for Nuclear Research (CERN) in Geneva, Switzerland, for five years, will head the M.I.T. Department of Physics effective on February 1, 1967.

He succeeds William W. Buechner, '35, who has asked to be relieved of his administrative duties to participate more actively in teaching and in planning new physics research facilities.

Dr. Weisskopf joined the M.I.T. Department of Physics in 1945 and was on leave during his assignment at CERN; he returned from Geneva in January, 1966, to assume the distinguished post of Institute Professor. Dr. Weisskopf is a past president of the American Physical Society; he holds the Max Planck Medal of the German Physical Society (1956) and honorary degrees from Oxford, Yale, Uppsala, Copenhagen, and Vienna.

Professor Buechner, Head of the Department of Physics since 1961, has been at M.I.T. continuously since receiving his doctorate in 1939. He played a leading role in the development of the Van de Graaff generator and its associated ion sources, and he has had a continuing broad interest in the engineering applications of electrostatic generators.

Electrical Engineering Head

Professor Louis D. Smullin, '39, who has held various research and teaching assignments in the field of microwave

V. F. Weisskopf

L. D. Smullin, '39

engineering at M.I.T. since 1941, has been named to head the Department of Electrical Engineering. He takes the place of Professor Peter Elias, '44, who will return to teaching and research in the field of information theory.

Professor Smullin came to the Institute in 1936 after undergraduate study at the University of Michigan; later he joined the Radiation Laboratory, organized the Microwave Tube Laboratory in the Research Laboratory of Electronics, was head of the Radar and Weapons Division at Lincoln Laboratory, and finally in 1955 joined the Faculty in Electrical Engineering.

Professor Smullin's recent microwave studies have led him to the general area of plasma dynamics, and he is now head of the Active Plasma Systems Group in R.L.E. where research centers on the production of extremely hot plasmas; this work is basic to the problem of power production through controlled thermonuclear fusion.

"The most severe difficulty facing electrical engineering students in the near future," Professor Smullin told *The Tech* in an interview following word of his new appointment, is the problem of keeping up with the rapid expansion of new science and technology. Students, he says, "must develop habits of continual study," and they must learn "how to read the literature."

Opening a New Era in Rowing at M.I.T.

At least 11 generations of M.I.T. students remember "every crack, creak, and leak" of the old boathouse one mile west of the dormitories as "a warm and wonderful place."

But great new numbers of students in new generations will remember the new one, dedicated on September 9 and opened for use on Registration Day for the fall term, as "an ornament to the shores of the Charles," in President Howard W. Johnson's words.

The Harold Whitworth Pierce Boathouse was made possible by a grant of the Pierce Charitable Trust, which was represented at the dedication ceremonies by Robert U. Ingalls and Richard M. Nichols, trustees. They and several hundred guests including the M.I.T. Athletic Board, many former crew members, and Alumni attending the Alumni Officers' Conference heard James R. Killian, Jr., '26, Chairman; President Johnson; Professor Ross H. Smith, Director of Athletics; R. Michael Kruger, '67, Commodore of the Tech Boat Club; and Jack H. Frailey, '44, Head Crew Coach, praise the historic role of crew at M.I.T. and promise its rise to new heights in the handsome new facilities.

The Pierce Boathouse, called one of the most modern collegiate crew training facilities available anywhere, features a unique indoor rowing simulator which moves a high-velocity stream of water past an eight-oar rowing frame at variable speeds up to 13 miles an hour. Later the frame will be instrumented so that the strength, timing, and endurance of different oarsmen and the efficiency of different blade shapes can be measured. The simulator is literally that, Mr. Frailey explained to the dedication guests, because it is free to move with the same stability as an actual shell and reproduces the fore and aft motion of a shell in the water.

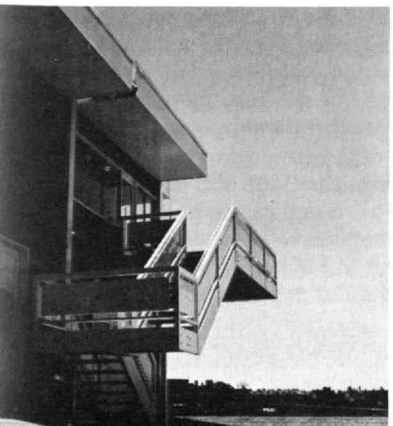
The boathouse also includes a lounge, observation decks, offices, a machine shop, storage for 24 eight-oared shells and several smaller boats, and lockers and shower rooms for both M.I.T. and visiting teams. It was designed by Anderson, Beckwith and Haible, architects, and built by Monahan Corporation, general contractors.

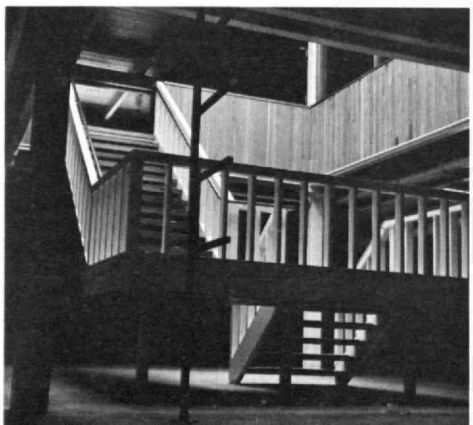
The new building, Professor Smith said at the dedication, "will mark a new era in rowing for the entire community." He prophesied new strength

Pride and enthusiasm were in Coach Jack H. Frailey's every word and act when he demonstrated (with an assist from James Duclos, '67, front, and Joel Robinson, '68) the rowing simulator and spoke at the dedication of the new Pierce Boathouse on September 9.

PHOTOS: FRED HILL

The Charles River, which "symbolizes to us what a football field does for other schools, and does so a good deal more handsomely" in the words of President Howard W. Johnson, has a new ornament in the Harold Whitworth Pierce Boathouse opposite Baker House.





for M.I.T. teams in intercollegiate competition, rowing available to students through physical education classes for the first time, and skulling added to the roster of intramural athletics and eventually for recreation as well.

Without the Pierce Boathouse, Mr. Kruger said, the emotional thrill of "being in a boat well rowed would be denied to many future students. It opens so many roads to victory for men who are tired of losing," he said.

Executive Development

Competition has been opened for places in three advanced study programs of the Alfred P. Sloan School of Management.

Two nine-week sessions of the Program for Senior Executives will be conducted in 1967, beginning on February 27 and September 18. Both will provide "an interrelated, interdisciplinary study of business functions, supporting elements, and the economic, social, and technological environment of the firm." There will be one full week of group dynamics and modified sensitivity training, and both sessions will include meetings in Washington with senior officers of the federal government. The program is planned for executives at or approaching the senior levels of management.

Meanwhile, Sloan Fellowships will be available for 45 younger executives in the midyears of their management careers. Sloan Fellows participate in a full year of work at M.I.T. leading to the master's degree, covering management functions, environment, policy, and practice; and their experience includes field trips to New York, Washington, and Europe. The result of this "rigorous and demanding year" is a broad understanding of significant concepts in management and "a strong motivation and competence to go on learning and growing."

Information about these activities is available from Peter P. Gil, Associate Dean for Executive Programs, at the Sloan School.

A Documentary on Growth

Substantial increases in educational operations, gifts, facilities, and investments were reported to the annual meeting of the M.I.T. Corporation on October 6 by Joseph J. Snyder, '44, M.I.T. Vice-president and Treasurer.

Total gifts for the year—a new record of just over $40.5 million (compared with about $23.5 million in 1964-1965)—included the bequest to the Institute by Alfred P. Sloan, Jr., '95, a major gift for an undergraduate student residence, and increasing general support from Alumni, foundations, and industry.

The Institute's educational and general expenses grew 18 per cent in 1965-1966, compared with more modest 11 per cent and 3 per cent increases in departmental sponsored research and major laboratories' research expenses, respectively. The educational expense increase, according to Mr. Snyder, "represented a further expansion of teaching, research, and other activities as new physical plant was occupied, carrying through on a greater scale the implementation of programs under the Second Century Fund."

Endowment and other funds increased by over $38 million in 1965-1966, and the total stood at over $229 million at the end of the year. Of this total, the endowment funds themselves comprise $110 million, and they have grown by $42.5 million in the past five years. The capital funds for professorships increased nearly one-third during the past year, Mr. Snyder told the Corporation.

Bachelor in Art and Design

A revised teaching program in architecture, which went into effect at M.I.T. this fall, increases to six years (from five) the work required for the first so-called "professional" architectural degree, the Bachelor in Architecture.

But the first four years of this work are now organized into a new undergraduate curriculum leading to the new degree of Bachelor of Science in Art and Design, and this program gives in effect a new and unique general education combining science, engineering, humanities, and the visual arts.

The four-year curriculum is also considered effective preparation for graduate work in architecture, planning, visual design, or criticism. Having completed the four-year sequence, students may continue for two more years to receive the "graduate" Bachelor in Architecture degree and finally for yet another year to earn the Master in Architecture; or they may proceed into graduate work toward master's and doctor's degrees in city planning or other professional areas.

The changes, according to Dean Lawrence B. Anderson, '30, of the School of Architecture and Planning, give added time for better training of candidates for Bachelor's and Master's in Architecture degrees, and they "provide within the general educational objectives of the Institute a new four-year concentration in aspects of the design of the physical environment." In this sense they are also a foundation for an advanced program in visual design which is now anticipated for the future at M.I.T.

To Julius Adams Stratton, distinguished educator, eminent scientist, far-sighted administrator, and perceptive humanitarian, your classmates of 1923 saluate you upon your retirement as President of the Massachusetts Institute of Technology: this inscription is on the Stratford silver tray given to Dr. and Mrs. Stratton on Alumni Day, 1966, in behalf of the Class of 1923 by David W. Skinner, '23 (right), Class President.

Humanities Series

Five chamber music concerts have been announced for the 1966-1967 M.I.T. Humanities Series, and tickets for the series ($10) or for individual concerts ($3 each) are available from the Kresge Auditorium Box Office.

Sunday concerts in the series (all at 3:00 P.M. in Kresge Auditorium) include the Hungarian Quartet on October 30 and November 13, the New York Chamber Soloists on February 12, and the Beaux-Arts Quartet on March 5.

The Borodin Quartet will perform on Thursday, January 12, at 8:15 P.M.

In Naval Architecture

Sherman C. Reed, '55, Commander, U.S. Navy, has been appointed associate professor of naval engineering at M.I.T. in the Department of Naval Architecture and Marine Engineering. He succeeds Commander William R. Porter, '48, who is now at the Institute for Defense Analyses.

Commander Reed, a graduate of the U.S. Naval Academy and a participant in the Korean conflict, received the degree of Naval Engineer from M.I.T. in 1955. His experience includes submarine construction and the design of guided missile frigates, and he has most recently served as project officer for the Concept Formulation of Ships.

Musician at M.I.T.

Elliott C. Carter, Jr., a leading American composer, is serving as visiting professor of music at M.I.T. this fall, and his First Piano Concerto will be performed by the Boston Symphony Orchestra while he is in residence at the Institute.

Professor Carter will give a course in "Trends in Contemporary Music" for undergraduates, dealing with general aesthetic directions and their effect on specific musical compositions. He will also give four lectures during the semester and will participate in the Humanities senior seminar.

Among some three dozen works by Professor Carter are one symphony, scores for two ballets—"The Minotaur" and "Pocahontas"—sonatas, quartets, and choral pieces. He received the Pulitzer Prize and the New York Critics Circle Award in 1960 for his Second String Quartet.

New Associate Director

Herbert S. Bridge, '50, well known for research and teaching in the fields of cosmic ray and space physics, has been named associate director of the M.I.T. Center for Space Research. In making the announcement last June, Charles H. Townes, Provost, called attention to work in the M.I.T. Laboratory for Nuclear Science using plasma probes flown on NASA satellites, from which has come a wealth of accurate data on the density and velocity of interplanetary plasma. "The success of this research," Dr. Townes reported, "has been due in large measure to Dr. Bridge's exceptional experimental skill and to his sharp and sound judgment in evaluating experimental data."

Dr. Bridge is a graduate of the University of Maryland, studied for his Ph.D. at M.I.T. from 1946 to 1950, continued in research at the Laboratory for Nuclear Science, and has recently joined the Faculty as professor of physics.

I.L.O. Appointments

Frank T. Bauchspies, '57, has been named director and Jack W. Christensen, '58, assistant director, of the Institute's Industrial Liaison Office. Mr. Bauchspies succeeds Richard B. Finn, Jr., '54, who had accepted a position with Edgerton, Germeshausen and Grier, Inc. Karl B. Kehler, '65, and Ronald S. Stone, '59, have been appointed as officers in the I.L.O.

Mr. Bauchspies served in the Korean conflict after graduation from the Georgia Institute of Technology, then came to M.I.T. for his master's degree in Chemical Engineering Practice. His six years of industrial experience with the California Texas Oil Corporation included general research and development, process engineering studies, and new product development.

Mr. Christensen joined the Industrial Liaison Office in 1963 following Air Force service as a pilot in the Strategic Air Command.

Mr. Kehler received S.B. and S.M. degrees in the Electrical Engineering Co-operative Course last June, with industrial work at General Radio Company.

Mr. Stone is on leave from the University of California at Berkeley where he was working on a doctoral program at the Lawrence Radiation Laboratory. Following graduation in Chemistry from M.I.T., he studied at the University of Vermont, and served with the U.S. Army Chemical Center at Edgewood Arsenal, Md.

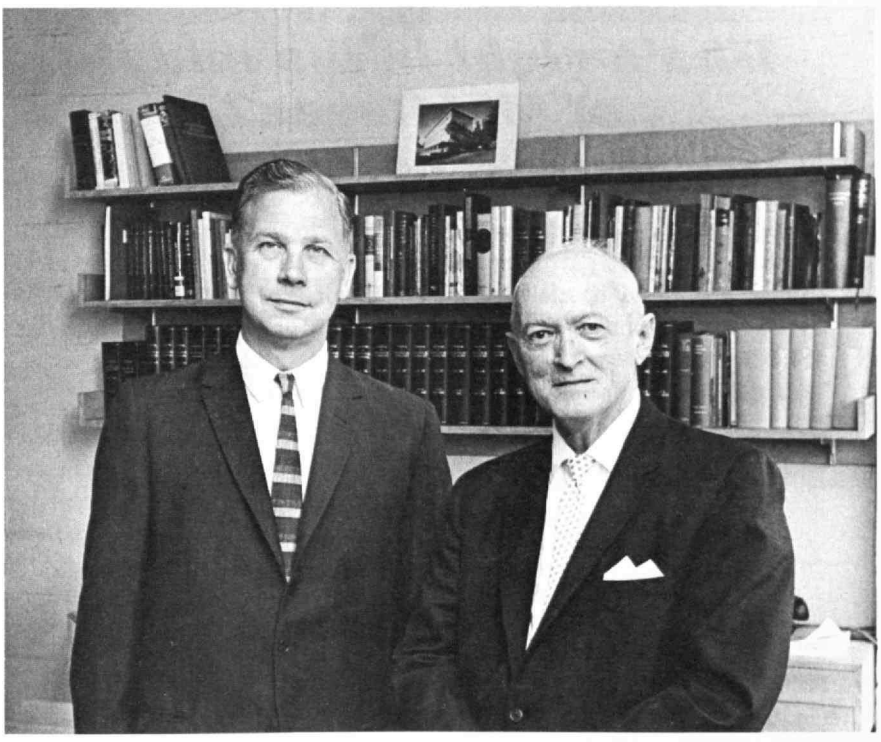
Professor of Structures

For the past two years a visiting professor in M.I.T.'s Department of Architecture, Waclaw P. Zalewski has been appointed there as professor of structures and as departmental senior Faculty representative in the Institute's Structural Model Testing Laboratory.

Dr. Zalewski is well known for his pioneering work in shell and prefabricated structures, particularly for the ingenuity of his design; in Europe he has been referred to as "a new Nervi."

A native of Poland, he studied civil engineering at the Polytechnic Institute in Warsaw, later received the de-

John M. Buchanan (left), Professor of Biochemistry, is shown as he received a check for $10,000 from the Damon Runyon Memorial Fund for Cancer Research, represented by Paul J. Trainor. Mr. Trainor is a grand trustee of the Fraternal Order of Eagles, a major contributor to the Damon Runyon Fund. The grant to M.I.T. will be used in a study of azaserine, one of the original anti-cancer drugs, which has been found by others to retard the rejection of transplants by the human body.



gree of master engineer from Danzig Polytechnic Institute and in 1962 the doctor of technical sciences degree from Warsaw Technical University.

To Aid Foreign Students

Robert A. Schuiteman has been appointed M.I.T.'s Associate Director of Admissions and Associate Adviser to Foreign Students. In addition to duties in the Admissions Office, he will share in meeting the many specialized needs of the Institute's foreign student population.

Since 1956 Dr. Schuiteman has been directing foreign student affairs at the University of Illinois (Urbana) where he was assistant dean of students. He has concentrated professionally in international education and was employed by the Universidad de Los Andes (Bogota) and the U.S. Information Service in Colombia.

A graduate of Hope College, Dr. Schuiteman received the master's and Ph.D. degrees in political science and higher education from the University of Michigan.

Lincoln Assistant Head

Gerald P. Dinneen has been promoted to Assistant Director of Lincoln Laboratory and in this position will be concerned with the general research, space communications, and VELA programs, as well as aspects of the Laboratory's assistance to the Cambridge Radio Observatory Committee. Temporarily, he also will serve as acting head of the Communications Division.

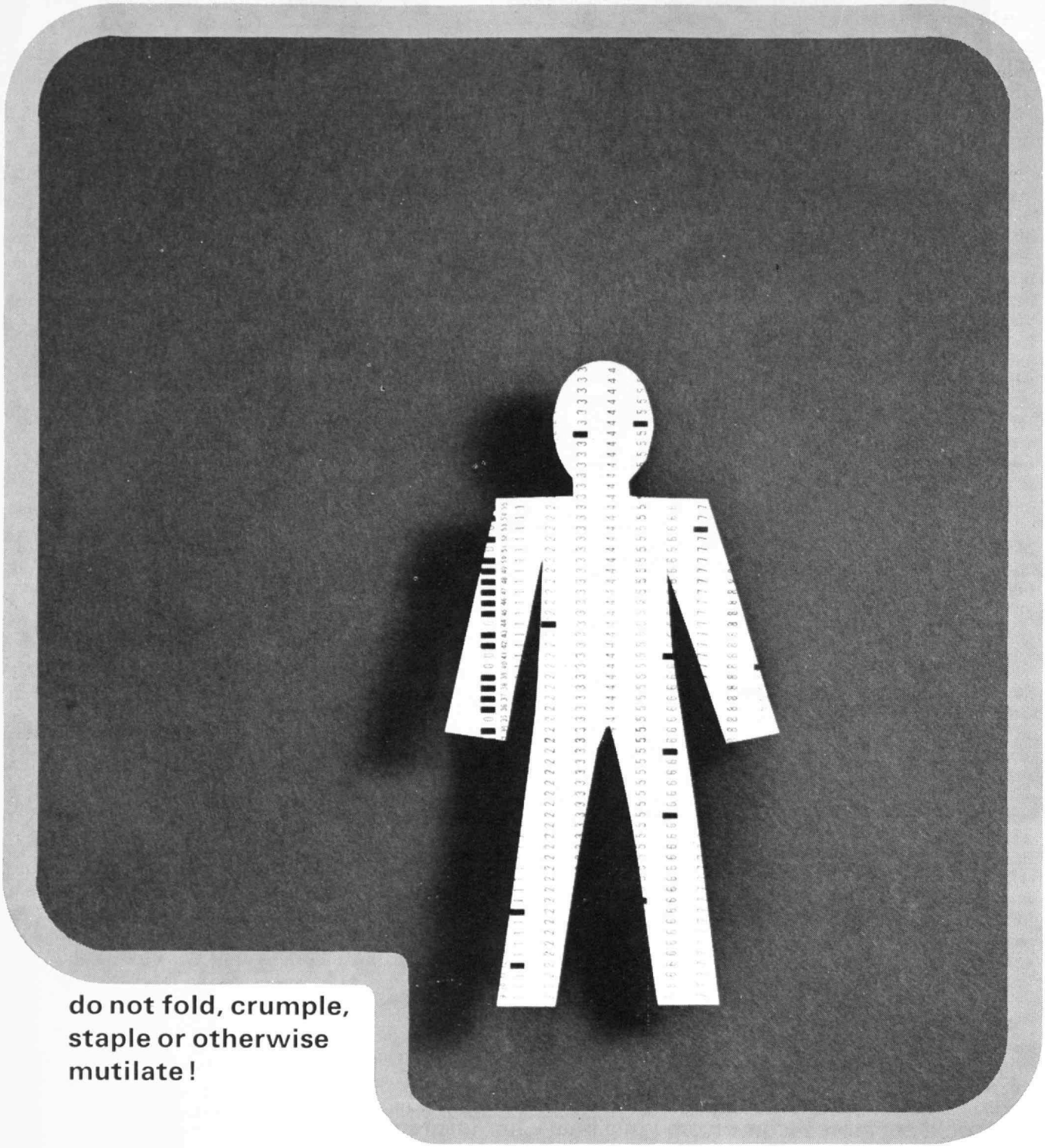
Now in his twelfth year at the Laboratory, Dr. Dinneen was associate head of the Communications Division in 1963 and its head in 1964.

Executive Programs' Dean

Peter P. Gil, experienced for the past four years in directing the Executive Development Programs, and as Senior Lecturer in the Sloan School, has been named associate dean for executive programs.

In his new post Dr. Gil will continue responsibility for the Executive Development Programs in the Sloan School of Management. Parts of this program are the Sloan Fellowships which provide a year's graduate study for young business executives and a semiannual, nine weeks' program for senior business executives.

Dr. Gil, who served in World War II, was graduated *cum laude* from Harvard College in 1949, received a master's degree from Harvard Business School in 1951 and a doctorate in 1963 from the University of Geneva.



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An Institute Gazette

In the 1950's he was in the research division of the Aluminum Company of Canada, Ltd., later was dean of students and assistant director of the Centre d'Etudes Industrielles in Geneva. He was a consultant and lecturer in executive development for European industrial organizations and universities while in Switzerland.

C. Edward Slye: 1902-1966

C. Edward Slye, Manager of the M.I.T. Office of Laboratory Supplies, died last July 24 in Wellesley.

Born in Plymouth, N.H., on October 17, 1902, Mr. Slye was graduated from the Boston High School of Commerce and came to work as a stock clerk in the Office of Laboratory Supplies in 1921. He became assistant manager in 1946 and manager in 1955. One of the founders of the M.I.T. Federal Credit Union, he served as treasurer for several years.

Mr. Slye was a member of St. John Lodge, A.F. & A.M., and of the Institute's Quarter Century Club. He is survived by his wife, Mrs. Evelyn Slye; two sons, George and Kenneth; and six grandchildren.

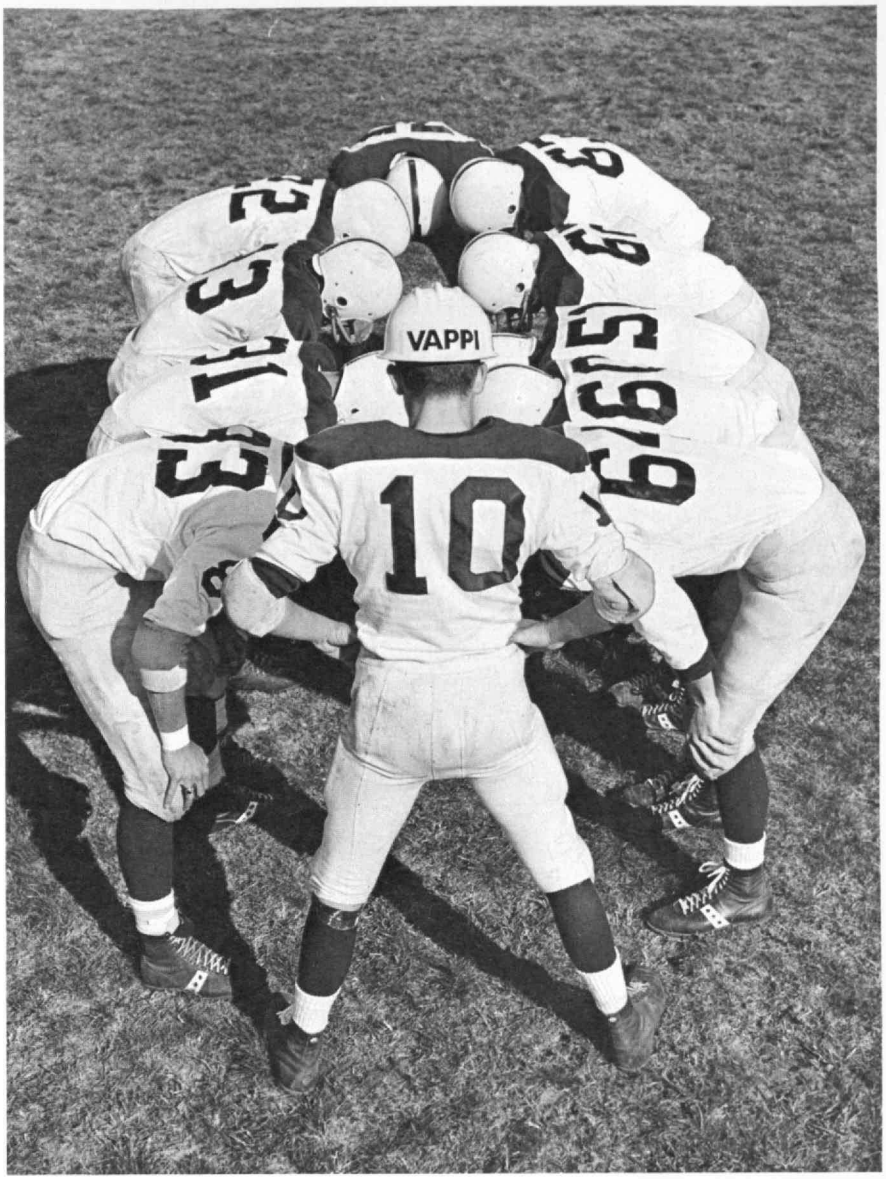
E. N. Gelotte: 1897-1966

A member of the Department of Architecture from 1930 until his retirement in 1963, Ernest N. Gelotte, '23, Associate Professor of Construction, Emeritus, died last August 7. He had provided effective liaison between the Department of Architecture and the Civil Engineering Department, with which he had been associated in 1926-1928. The structural aspects of buildings were of particular interest to Professor Gelotte and he had contributed to the Institute's teaching program through his appreciation of the relation of structures to architecture.

Professor Gelotte was born in Quincy on August 10, 1897. After attending Quincy High School, and later receiving an S.B. degree from M.I.T. in 1923, he returned to the Institute in 1926 as assistant and then instructor in the Department of Civil Engineering. In 1930 he joined the Department of Architecture, was promoted to assistant professor of construction in 1937, associate professor in 1943, and upon retirement served as lecturer.

In addition to his M.I.T. activities, he was consultant to a Springfield architectural firm, served on the Quincy Planning Board, and, an active Mason, was a member of the Square and Compass Club.

Professor Gelotte is survived by his wife, the former Vera Ljungberg of



Stockholm; two sons—Erik M. Gelotte, '54, and Karl O. Gelotte, '57; and a sister, Miss Anna Gelotte.

Julie P. Fassett: 1896-1966

Mrs. Julie Pattengell Fassett, wife of Dean Frederick G. Fassett, Jr., died suddenly in Damariscotta Mills, Maine, on September 14. Recalling the warmth of her 10 years of hospitality in the Dean's House and more than 25 years' previous association with M.I.T. students, *The Tech* appropriately called her "for years the Institute's most loved hostess."

Barker Fellowships

Joseph W. Barker, '16, has been honored by the establishment of an engineering fellowship in his name, and the first three Joseph Warren Barker Fellows will study at M.I.T.

The fellowship is made possible by Research Corporation, a foundation for the advancement of science and technology, of whose Board of Directors Dr. Barker has been a member since 1934. It will be given every year to a promising student in engineering, providing a stipend of $6,000 and a contribution of $2,000 to the school which the fellow attends for its unrestricted use in connection with the fellowship.

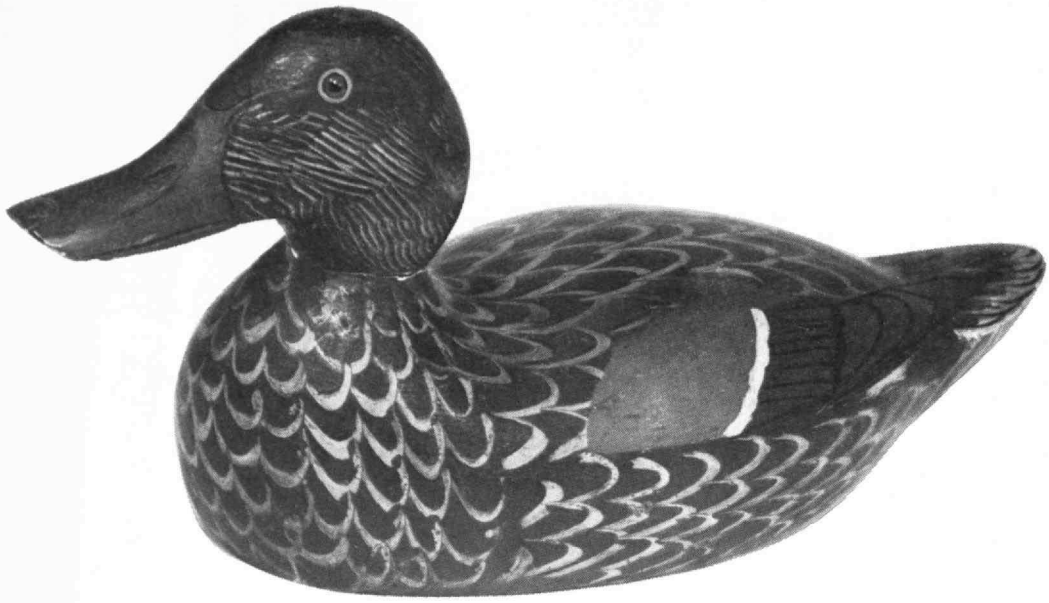
Dr. Barker was president and chairman of Research Corporation from 1945 to 1959, a period during which the Corporation emerged as an important contributor to science in U.S. colleges and universities through grants for fundamental research. He was a member of the M.I.T. Faculty in the Department of Electrical Engineering from 1925 to 1929, and later he was dean of engineering at Columbia University for 15 years.

Kennedy Scholars

The first beneficiaries of a unique British memorial to the late John F. Kennedy are now at M.I.T.

It was in March, 1964, that the Prime Minister of Great Britain proposed in Parliament that the British nation raise a memorial to the late President, to consist of an acre of the field at Runnymede where Magna Carta was signed 750 years ago, given in perpetuity to the U.S., and "a scholarship fund for young men and women from the United Kingdom to go, as undergraduates or graduates, some to Harvard University or Radcliffe College, some to the Massachusetts Institute of Technology."

The first Kennedy Scholars, three women and seven men, were greeted at



How can an investor tell whether a "sitting duck" is the real thing?

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a reception given for them on September 15 at the Beacon Hill home of British Consul General and Mrs. Ralph W. Selby. Mrs. Kennedy, the two Senators Kennedy, Lord Harlech, Chairman of the Board of Trustees of the Kennedy Memorial Trust and formerly British Ambassador to the U.S., and other members of the Board of Trustees (including the undersigned) attended the party, as did the presidents of the three participating institutions, Mrs. Mary I. Bunting, Howard W. Johnson, and Nathan M. Pusey, and other members of the faculties.

The three graduate scholars working at M.I.T. this year are Caroline R. Elston from Lady Margaret Hall, Oxford University, in mathematics; John H. J. Allum from Birmingham University, in mechanical engineering; and Walter Greaves from University College, London, in the field of electrical engineering.

M.I.T. welcomes these first representatives of the thoughtful British memorial.— *David A. Shepard, '26*

Ad Multos Annos

An important neighborly gesture by the City of Cambridge was nearly lost at M.I.T. last June amid the celebrations of the Institute's 50th anniversary in residence.

Special resolutions of the Cambridge City Council on June 13 called attention to the fact that M.I.T. "has been a good neighbor . . . during its half century here, and . . . has brought great renown to this City throughout the entire world," and proposed that the City "extend its sincere congratulations . . . and wish M.I.T. warmly and enthusiastically *ad multos annos* as this great institution faces the future; and . . . wish godspeed and success to President Julius A. Stratton and his gracious wife as they leave M.I.T.; and . . . extend a hearty welcome to President-elect and Mrs. Howard Johnson."

Vincent A. Fulmer, '53, Vice-president and Secretary of the Institute, called the resolutions "a splendid gesture on the part of the City, bringing evidence of the City's high regard for the Institute and its leadership."

Astronauts Present, Future

U.S. Navy Commander Edgar D. Mitchell, '64, whose background includes academic work in management and advanced technology, has been selected for astronaut training at NASA's Manned Spacecraft Center in Houston for the Apollo and subsequent space missions, after training at the Air Force Aerospace Research Pilot School.

Meanwhile, other scientists and engineers may now apply to the Space Science Board of the National Academy of Sciences-National Research Council to serve as future astronauts. Career appointments in the manned space flight program will be awarded on the basis of applications due January 8, 1967, at the N.A.S.-N.R.C. headquarters in Washington.

Commander Mitchell attended Carnegie Institute of Technology and the U.S. Naval Postgraduate School before coming to M.I.T. for a doctor's degree in the field of aeronautics and astronautics.

Editorial Award

The 1965-1966 issues of Technology Review (Volume 68) were honored with the first-place citation for editorial content in the 1966 national alumni magazine competition of the American Alumni Council. Volta W. Torrey served as Editor of Volume 68 through 1965, and the 1966 issues were edited by William T. Struble as Acting Editor and Editor.

Kresge Organ Recital

The first of five Kresge Auditorium organ recitals of the current season is set for November 23 (8:30 P.M.), when Robert Anderson of Southern Methodist University will perform. No reserved seats; admission $1.50 at the door.

"The Gondoliers"

More than 100 students will have a share in the M.I.T. Gilbert and Sullivan Society's production of "The Gondoliers" in Kresge Auditorium on November 17, 18, and 19 (tickets $1.75 from the Society at Box 3, M.I.T. Station, Cambridge, or the Kresge box office at ext. 2910).

The Society's previous hits have made it a major factor in undergraduate extracurricular activities, and its membership now includes over 150 Gilbert and Sullivan fans.

How to Succeed in 10 Years

Though less than 10 per cent of them were graduated from the Institute in business and engineering administration, nearly 40 per cent of the M.I.T. Class of 1956 who responded to a reunion questionnaire now consider that their principal duties are management. Twenty per cent are classified by their companies as management, 17 per cent are in development, and 15 per cent in research.

The mean salary 10 years after graduating from M.I.T. is $14,264. Classmates with higher grade averages at M.I.T. tend to make more money; those who don't remember their averages make less than those who do.

Fifty per cent voted Democratic in

the 1964 Presidential election, 37 per cent Republican. These and other statistics, including some more irrelevant (and irreverent) ones, come from a class profile based on responses from nearly half of the class anticipating the 10-year reunion last June. The man responsible declined to be identified.

Beavers in Charge

Of the 71,107 executives listed in the newest edition of *Poor's Register of Corporations, Directors and Executives,* 932 hold M.I.T. degrees. Only nine schools (led by Harvard) have more alumni in this list of the country's chief businessmen: among them are six Ivy League schools and two Midwestern state universities.

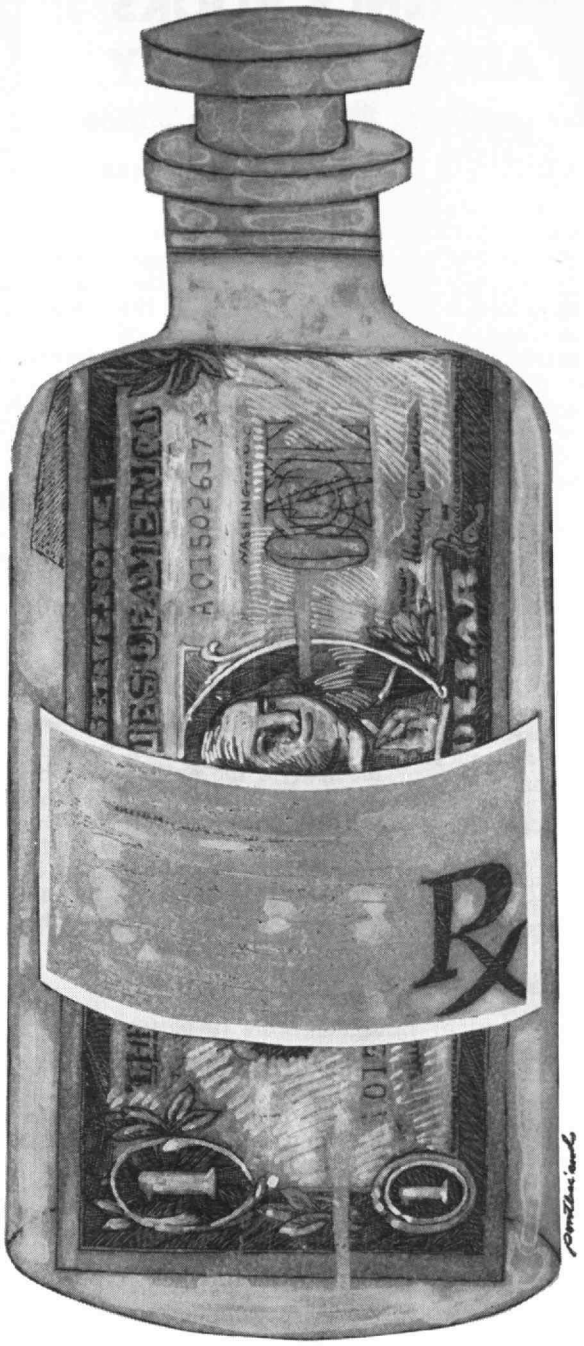
Smithsonian's Dr. Abbot

At the age of 94, Charles G. Abbot, '94, of the Smithsonian Institution, Washington, has completed two new research papers but confesses that "modern physics has gone so far beyond me that I cannot follow." In an effort to do so, Dr. Abbot asked the M.I.T. Physics Department for some suggested readings; of eight books recommended, Dr. Abbot says, only one (John C. Slater's *Modern Physics*) "was understandable enough to me to inform me if Einstein's equation, $E = mc^2$, had been verified both ways."

Dr. Abbot's two Smithsonian papers, publications numbers 4656 and 4659, are an historical account of the Smithsonian's Astrophysical Observatory from 1904 to 1953 and an essay on the correlation of variations in solar radiation and rainfall. Dr. Abbot finds evidence that the identical family of harmonic periods are present in both radiation and rainfall and that these may be used for long-range forecasting. But now, he says, technology is having such broad effects on the environment that the atmospheric circulation may be modified and "past records made useless for forecasting in the future."

Man in the Middle

An M.I.T.-educated civil engineer is the ranking boss of 27,000 Egyptian laborers and 800 Soviet engineers and technicians on Egypt's great Aswan High Dam project. *Life* Magazine (June 17) says that Ibrahim Z. Kinawy, '31, has one of the largest work forces assembled for a single project anywhere in the world in modern times. With the title of Deputy Minister for the High Dam, Mr. Kinawy is responsible to bosses in both Cairo and Moscow, has worked on



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An Institute Gazette

dams in the Aswan region for most of his professional career.

Bonanza in the News

Many will remember the headlines, but few M.I.T. people except her classmates have realized that Mrs. Marion Hart, '13, is one of our own.

The headlines were made in midsummer, when Mrs. Hart, who is 74, apparently became the oldest person ever to fly solo across the Atlantic. She arrived in London in her Bonanza single-engine craft on July 16, having stopped in Iceland en route from Presque Isle, Maine. Later she continued her air tour of the continent with flights to Copenhagen and Helsinki.

Civic Appointment

Albert O. Wilson, Jr., '38, began his one-year term as vice-president of the Cambridge Chamber of Commerce on October 1; he is president and treasurer of A. O. Wilson Structural Co., Inc., Cambridge-based fabricators of structural steel and iron for buildings and bridges.

On the Honor Roll

W. Sumner Brown, '66, has been honored by New England's sports magazine, *Sunrise,* for his M.I.T. record. "Besides revising Tech's distance running records," says *Sunrise* (he set one-mile marks of 4:15.6 indoors and 4:14.1 outdoors, two-mile marks of 9:30.4 and 9:20.4), "Sumner achieved top academic honors with a cumulative average of 4.8 from a possible 5.0" in his four-year M.I.T. career. He won both Clifford and Compton Awards last May.

Roger Adams Medalist

John D. Roberts, a member of the M.I.T. Chemistry Department from 1946 to 1953 who is now chairman of the Division of Chemistry and Chemical Engineering at the California Institute of Technology, received the $10,000 Roger Adams Award in Organic Chemistry from the American Chemical Society at its fall 1966 meeting.

Microfilm Standardization

Standards for film and microfilm processing are now available to libraries in *Microfilm Norms,* a booklet resulting from work by a committee of the American Library Association of which Peter R. Scott, Head of the M.I.T. Microreproduction Laboratory, was chairman. Among its members was Vernon D. Tate, former M.I.T. Director of Libraries who is

now on the faculty of the U.S. Naval Academy, Annapolis.

Summer at Oak Ridge

Robert C. Hewitt, '67, a senior in Chemical Engineering at M.I.T., spent the summer working in chemical technology as a student trainee of Oak Ridge Associated Universities. There was active competition for his assignment: fewer than 100 students were chosen from over 600 applicants.

Individuals Noteworthy

John Chipman, Professor Emeritus of Metallurgy at M.I.T., has been awarded the Carl Leug Medal of the Verein Deutscher Eisenhüttenleute for his work in the application of natural laws to the metallurgical problems of steelmaking.

President **Howard W. Johnson** and **Charles H. Townes,** Institute Professor (physics), are two of the 13 men appointed by NASA to the new Ad Hoc Science Advisory Committee for the planning of the next generation of space projects.

Perry A. Miles, Associate Professor of Electrical Engineering from 1962-1966, is now a principal scientist assigned to the theoretical physics and laser research group at Raytheon Company's Research Division.

Paul A. Samuelson, Institute Professor and Professor of Economics at M.I.T., is a new contributing columnist to *Newsweek*.

Five M.I.T. Alumni are new members of the National Academy of Engineering: **Edward E. David, Jr., '47,** Executive Director, Communications Systems Research Division, Bell Telephone Laboratories, Inc.; **Harold E. Edgerton, '27,** Professor of Electrical Measurements, M.I.T.; **James B. Fisk, '31**, President of Bell Telephone Laboratories, Inc.; **Warren K. Lewis, '05,** Professor Emeritus of Chemical Engineering and Honorary Lecturer, M.I.T.; and **Hunter Rouse, '29,** Dean of Engineering, University of Iowa. Also elected to membership was **Jerome B. Wiesner,** Provost of M.I.T.

George W. Burpee, '06, for 40 years a civil engineer and partner in Coverdale & Colpitts, New York City management consulting engineers, has been awarded the 1966 "Award of Merit" by the American Institute of Consulting Engineers.

Everett M. Strong, '22, Professor of Electrical Engineering at Cornell, was awarded the Illuminating Engineering Society Gold Medal Award in recognition of his research on light and vision.

John E. Burchard, '23, for 16 years Dean of the School of Humanities and Social Science at M.I.T., has been appointed Acting Dean of the College of

To Suit Your Specialized Needs

Molecular Organization and Biological Function

John M. Allen

These papers, by such authorities as Christian B. Anfinsen, Alexander Rich, Thomas F. Anderson, J. David Robertson, Albert L. Lehninger, Lawrence Bogorad, John D. Dowling, and I. R. Gibbons, are presented to reflect the progressive "molecularization" of the approach toward an understanding of cellular organization and function. They deal not only with the properties of individual molecules, but also with the defining properties of these molecules as they are integrated into progressively higher orders of structure and function.

$5.00 (paper), $9.00 (cloth)
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Chemical Equilibrium

Allen J. Bard

This text emphasizes general methods of problem-solving rather than the particulars of specific problems and the derivation of formulas for specific cases. A rigorous introduction to the solution of problems in chemical equilibria in general and in ionic eguilibria in particular, with stress on the material balance and electroneutrality approach. Bibliographies suggest important papers accessible to the student.

202 pages, $7.00

Procedures in Nucleic Acid Research

G. L. Cantoni and David R. Davies

In order to reduce the potential barrier which confronts the specialist attempting to use the many new techniques in nucleic acid research, this volume brings together all of the methodology pertinent to research. Covers preparation of nucleic acids, polynucleotides and enzymes directly related to the preparation, purification and/or activation of nucleic acids and/or polynucleotides.

667 pages, $25.00

Mathematics for Physicists

Philippe Dennery and André Krzywicki

This text gives a thorough background in the mathematics needed to understand today's more advanced topics in physics and engineering. It covers the theory a physicist needs to be conversant with, and which is presented in view of applications. Each abstract idea is accompanied by a simple, concrete example, showing the student that abstraction is merely a generalization from specific cases.

Coming January, 1967

Introduction to Real Analysis

Casper Goffman

Introduces for upperclass courses the processes of analysis and uses them to obtain simple but interesting and important mathematical facts. Treats both Power series and Fourier series at a depth not customary at this level. Considers real number system by means of modified Dedekind cuts and then identifies real numbers as a complete ordered field. End-of-chapter exercises.

160 pages, $7.50

Solid-State and Semiconductor Physics

John P. McKelvey

A thorough treatment of bulk semi-conductor properties, excess carrier behavior, and *p-n* junction devices. Selected topics in general solid-state physics necessary for understanding semiconductor theory are outlined; quantum mechanics and statistical mechanics are treated on an elementary level in self-contained chapters. Exercises; appendixes; subject-author indexes; review articles.

512 pages, $12.50

Biological Chemistry

Henry R. Mahler and Eugene H. Cordes

Based on sound chemical principles, with clear distinctions between experimental observations and interpretation of models. The first half of this book deals with the structures and functions of the two classes of biopolymers, nucleic acids and proteins. The second half deals with metabolism. 227 illustrations.

872 pages, $14.50

Spin-Lattice Relaxation in Ionic Solids

A. A. Manenkov and R. Orbach

A collection of papers which mark the major early contributions in the field of spin-lattice relaxation in solids and those of more recent date, some of which are summary in nature, illustrating new and significant advances. The papers follow closely the historical development of the subject, from Professor Waller's classic paper to Van Vleck's inportant contributions, and very recent experimental and theoretical studies.

453 pages, paper, $5.00

Elementary Electronics

D. Hywel White

Requiring no previous experience in electronics, but assuming an elementary knowledge of calculus, electricity, and magnetism, this book begins with first principles and proceeds to a level of reasonable skill in practical circuit and device design. The classwork may be combined with laboratory experiments, but this is not essential, as the text presents many oscilloscope photographs. List of problems at chapter ends.

172 pages, $9.50

Harper & Row, Publishers, 49 East 33d Street, New York 10016

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Environmental Design at the University of California, Berkeley campus. Professor Burchard will return to teaching duties in the Sloan School of Management at M.I.T. in the second term of the current year.

Professor **James M. Robbins, '23,** is now Chairman of the Civil Engineering Department at Newark College of Engineering.

George J. Leness, '26, is now Chairman and Chief Executive of Merrill Lynch, Pierce, Fenner & Smith.

Kenneth P. Morse, '26, President of Standard Register Company, was elected to the Board of Directors of the Third National Bank and Trust Company of Dayton.

William L. Taggart, '27, an M.I.T. Corporation member, is now president of the Dewey and Almy Chemical Division of W. R. Grace & Company. He has served as Executive Vice-president since 1956.

Cole A. Armstrong, '28, is Associate Director of the National Communications Directorate, Office of Telecommunications Management, responsible for the National Communications System and the development of national policies in the field of telecommunications.

Henry G. Lamb, '28, a safety engineer for American Standards Association, was elected Vice-president of the American Society of Safety Engineers. **Alan L. Kling, '37,** Director of Loss Prevention, Olin-Mathieson Chemical Corporation, is a Region Vice-president of the same society.

Portia Law School and Calvin Coolidge College have awarded **Sidney L. Kaye, '30,** an honorary doctor of humanities degree in recognition of his 25 years of service to Beth Israel Hospital and for his contributions as president of the Parker Hill Medical Center, Boston.

Robert W. Baschnagel, '32, has been appointed General Sales Manager of the Rochester (New York) Gas and Electric Corporation. He joined RG&E in 1935 as an industrial engineer, was promoted to supervisor of power sales in 1950, and since 1963 has been assistant general sales manager.

Harold G. Mangelsdorf, '32, is a member of the Atomic Energy Commission's Advisory Committee on Reactor Safeguards established to provide advice to the AEC on the safety aspects of reactor design and operation. Dr. Mangelsdorf retired as President and Director of Esso Chemical Company this year.

Donald W. Kenney, '36, is now a Vice-president of Rohm and Haas Company. He has been with the company since 1945.

James McCormack, '37, former Vice-president of M.I.T., was awarded an honorary doctor of laws degree by Bowdoin College during commencement ceremonies in June. He now serves as Chairman and Chief Executive of the Communications Satellite Corporation.

The Reverend **William G. Guindon, '38,** a Jesuit priest, is now Dean and a Vice-president of Holy Cross College, where he will be in charge of academic affairs.

Edwards R. Fish, '39, Controller of Milliman & Robertson, has been elected Secretary of that corporation.

Henry S. Rowen, '41, is now President of the Rand Corporation.

George H. Vineyard, '41, is now Associate Director of Brookhaven National Laboratory and will become Laboratory Deputy Director next year when **Clarke Williams, '24,** retires. Dr. Vineyard has been associated with the Laboratory as a physicist since 1954.

Teddy F. Walkowicz, '41, has been elected a Director of Cerro Corporation. He is an Associate of the Rockefeller Family & Associates and a director of numerous other corporations.

John H. Cantlin, '42, formerly its Executive Vice-president, is now President of Smithcraft Corporation, manufacturers of lighting fixtures.

Albert F. Clear, '42, has been appointed Vice-president—Sales Co-ordination for the consumer divisions of The Stanley Works. He will also continue as Vice-president and General Manager of the Hardware Division.

Robert W. Van Tuyle, '42, was elected President of Drew Chemical Corporation, where he has been a Vice-president and Director since 1953.

Sidney Siegel, '43, of Atomics International, is now the President of the American Nuclear Society.

James N. Thurston, '43, Professor of Electrical Engineering at Clemson University and Chairman of the Department since 1954, has been chosen an Alumni Professor at that institution.

Gifford H. Stanton, '46, is now a Senior Associate with Stewart, Dougall & Associates. He was formerly with the Air Conditioning Division of American-Standard.

John G. Truxal, '47, has been appointed Provost of the Polytechnic Institute of Brooklyn where he has been a faculty member since 1954.

Alfred E. Beck, '48, Denman K. McNear, '48, and **Andrew F. Corry, Jr., '47,** are members of the Advanced Management Program of the Harvard University Graduate School of Business Administration this fall.

Perry A. Miles

James B. Fisk, '31

Hunter Rouse, '29

G. W. Burpee, '06

J. E. Burchard, '23

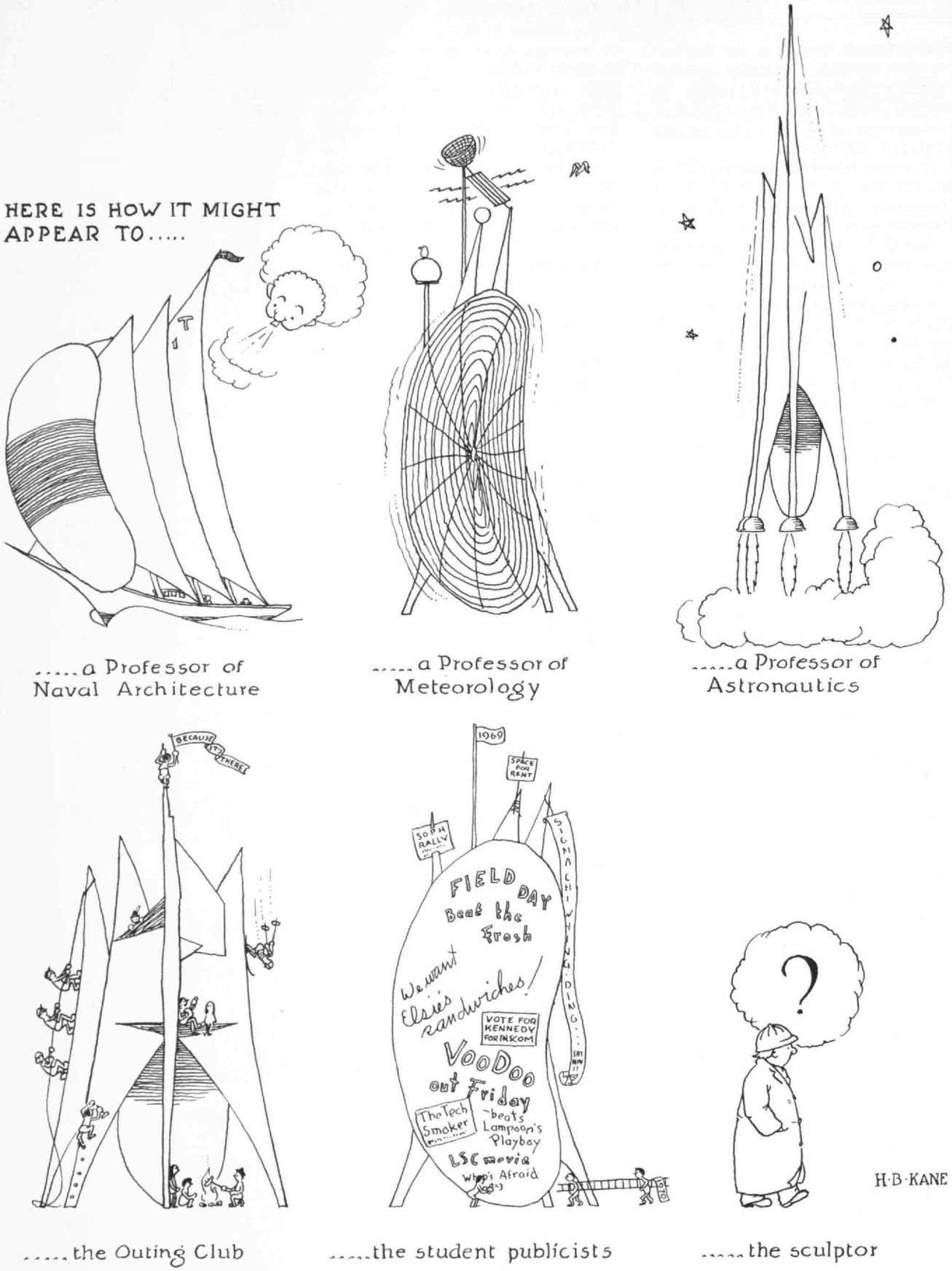
J. M. Robbins, '23

W. L. Taggart, '27

C.A. Armstrong,'28

J. McCormack, '37

H. J. Leavitt, '49



The Big Sail: Alexander Calder's Towering Steel Sculpture in McDermott Court

"A successful work of art appears in different forms to different people. Each viewer sees in it what he, and only he, wishes to see . . ."

An Institute Gazette

Sheldon Kaplan, '48, is now President of the United States Railway Equipment Company. He joined the company in 1959 and has served as Executive Vice-president since 1964.

Professor **Robert G. Loewy, '48,** is now Director of the Space Science Center at the University of Rochester. He has been with the University's Department of Mechanical and Aerospace Sciences since 1962.

William S. Edgerly, '49, is now Financial Vice-president of Cabot Corporation. He joined the company in 1952 and recently served as Vice-president and Treasurer.

Robert A. Hard, '49, has been appointed Director of Research and Development for the Mining and Metals Division of Union Carbide Corporation where he is responsible for developing new and improved products and processes.

Harold J. Leavitt, '49, psychologist and specialist in organizational management, is the Walter Kenneth Kilpatrick Professor of Organizational Behavior and Psychology at Stanford Graduate School of Business this year.

Charles P. Shultz, '49, Dean of the Graduate School of Business at the University of Chicago, has been elected to the Board of Directors of General American Transportation Corporation.

Peter Thorton, '49, has been elected Vice-president—Marketing at United States Envelope Company. He joined the company in 1964 as Manager of Operations Planning and later became General Marketing Manager.

William. E. Wright, '50, has been appointed Deputy Division Director, Division of Mathematical and Physical Sciences at the National Science Foundation.

In July **Don G. Friedman, '51,** was named Associate Director of Research in the research department of The Travelers Insurance Companies, Hartford, Conn. Mr. Friedman has been with the company since 1955, first as a research associate and since 1960 as assistant director of research.

Mark Nelkin, '51, holds a special award by the American Nuclear Society for outstanding contributions to reactor physics since 1955. His theoretical work on neutron thermalization and thermal spectra have been the basis for revolutionary advances in this field.

John M. Salzer, '51, is now Vice-president—Technology and Planning, Librascope Group of General Precision, Inc. which produces torpedo weapon-control systems and digital systems and programming.

Richard Strauss, '51, is the newly appointed Executive Vice-president of National Poly-chemicals, Inc. He previously was employed by American Cyanamid Company and Arthur D. Little, Inc.

Edson G. Case, '52, is now Deputy Director of the Atomic Energy Commission's Division of Reactor Licensing, which is responsible for the safety review and for evaluation of the design, operation, and construction of atomic energy facilities.

John T. Fitch, '52, is now Physical Sciences Editor for Ealing Film-Loops, producer of high school and college level films on physics, chemistry, and the earth sciences.

John S. Rydz, '52, has been appointed Vice-president—Research and Development of Diebold, Inc., a producer of bank vault equipment.

During his retirement ceremony at Wright-Patterson Air Force Base, Ohio, Lieutenant Colonel **Eugene G. Sharkoff, '52,** was awarded the U.S. Air Force Commendation Medal for meritorious service as a physics professor.

Luis R. Lazo, '53, is now President of Transport Dynamics, Inc., a subsidiary of American Metal Products Company. He has served as Vice-president and General Manager since 1965.

At the Bell Telephone Laboratories in Holmdel, N.J., **Milton L. Almquist, '54,** is now Head of the Transmission Engineering Department where his new duties include engineering of local and private telephone networks.

Carl R. Gloskey, '54, is now Vice-president of M & T Chemicals Inc., New York, a wholly owned subsidiary of American Can Company. He will also continue as general manager of the Chemicals Division.

Ward W. McAllister, '56, is now an Executive Vice-president of The People's Gas Light and Coke Company, Chicago.

William E. Northfield, '56, is now Special Assistant to the President of Melpar, Inc., a subsidiary of Westinghouse Air Brake Company; he will aid the President as both a technical and administrative adviser.

Wesley Wright, Jr., '57, Vice-president, Secretary, and Treasurer of Southern Materials Company, Inc., has been elected to the board of the First & Merchants National Bank of Richmond, Va.

William F. Massy, '58, is at Carnegie Institute of Technology as a Visiting Associate Professor in Industrial Relations.

John P. Eberhard, '59, has been named Director of the NBS Institute for Applied Technology, which creates opportunities for the introduction of new technology in government and in-

W. S. Edgerly, '49

Robert A. Hard, '49

D. G. Friedman, '51

John T. Fitch, '52

E. G. Sharkoff, '52 (left) receives the Air Force Commendation Medal.

M. L. Almquist, '54

C. R. Gloskey, '54

W. McAllister, '56

C. A. Scolatti, '60

An Institute Gazette

dustry. As its head, Mr. Eberhard will direct programs in engineering standards, building research, electronic instrumentation, textile and apparel technology and technical analysis.

Frederick E. Mangelsdorf, '60, has been appointed Assistant Director for Development and Information of the Woods Hole Oceanographic Institution and will be responsible for development activities, public information and educational projects.

Colonel **Charles A. Scolatti, '60,** is now Vice-commander of the Aerospace Research Laboratories, Office of Aerospace Research, Wright-Patterson Air Force Base.

Arnold F. Stancell, '62, chemical engineer and surface physicist, has been named a Research Associate by the Mobil Chemical Company in recognition of "his extraordinary scientific and technical achievement."

Review on Books

(Concluded from page 13)

quiring knowledge. There are evident benefits in psychology, anthropology, sociology, and possibly all the social sciences (as well as new problems, such as establishing criteria for handling knowledge of low reliability). It is not as clear, however, that the "subjective" epistemology might be of advantage, as Maslow suggests, even to the astronomer, geologist or chemist. Nor can his affirmative, though tentative, answer to the question: Can science discover the values by which men should live? be readily accepted.

In recent years, there have been other criticisms of the self-limiting characteristics of classical science and examinations of the nature of scientific knowledge. Michael Polanyi's *Personal Knowledge* (1958) is a notable example. (Dr. Maslow's book is a condensation of a planned longer treatment that he abandoned when he discovered Polanyi's comprehensive work.) *The Psychology of Science* suggests new approaches and new methods in science, so that man and society may become not only proper, but actual, subjects for scientific study. The subtitle of the book, *A Reconnaissance,* carries a connotation of scouting in hostile territory. This is perhaps an appropriate metaphor. It is to be hoped that at least some scientists will find the book controversial, for it is often true as Goethe said, "what we agree with leaves us inactive, contradiction makes us productive."

STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION

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Publisher: Donald P. Severance, Room E19-430 M. I. T., Cambridge, Massachusetts 02139

Editor: John I. Mattill, Room E19-430, M. I. T., Cambridge, Massachusetts 02139

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D. Total No. of Copies Distributed, *(Sum of lines B1, B2, and C)*	21,257	23,084

I certify that the statements made by me above are correct and complete.

(Signature of editor, publisher, business manager, or owner)

JOHN I. MATTILL, EDITOR

Letters on Review

Growth Statistics

To the Editor:

The July issue of Technology Review has a tabulation on page 77 which shows registration, staff, and degrees at three different "Yesteryear" times.

As an Alumnus I find these figures interesting. Do you have the comparable figures as of the present?

GEORGE F. WOLLINGER, JR., '37
San Luis Obispo, Calif.

The total student body in 1965-1966 was 7,408 (340 of them women), including 3,653 graduate students, 3,755 undergraduates (51 per cent), and 968 freshmen. (Tentative figures for 1966-1967 are 3,842 undergraduates, 3,615 graduates, total 7,457.) All 50 states, the District of Columbia, and two U.S. territories were represented in the 1965-1966 student body; 1,760 students (nearly 24 per cent) came from Massachusetts, 351 from other New England states. From 73 foreign countries there were 951 students, about 12 per cent of the total. There were 904 members of the Faculty, and M.I.T. awarded 829 bachelor's, 845 master's, 126 engineer, and 360 doctor's degrees in 1965-1966.—Ed.

"Wise Counsel"

To the Editor:

As one who attended the recent Alumni Officers' Conference, I want to report that I not only learned much concerning the Institute but that I found it a most enjoyable occasion for meeting so many Alumni and Faculty.

I believe that the talk by Mrs. Compton at the luncheon on Saturday was a most fitting climax to the conference. It seems to me that the Alumni should all have an opportunity to read her talk with its many pertinent facts and wise counsel.

The list of birthdays of Alumni which you have included in the July Review is most helpful to our class secretaries; so is the separate list of Alumni memorialized at the service on Alumni Day.

CHESTER L. DAWES, '09
Cambridge, Mass.

We are pleased and proud to publish Mrs. Compton's address in "An Institute Gazette" in this issue of The Review. The alumni birthday list will be a continuing feature from our "alumni news desk" during the coming year.—Ed.

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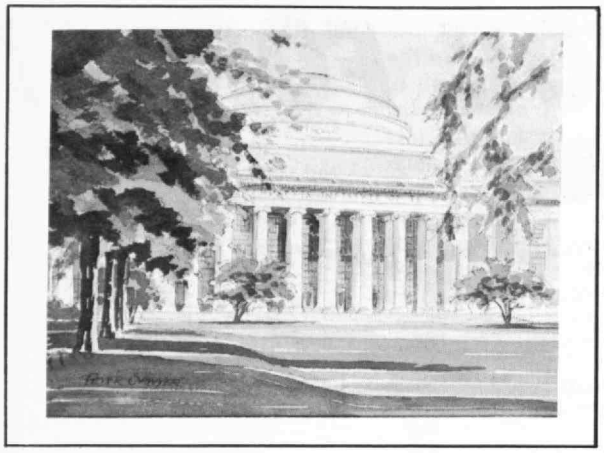

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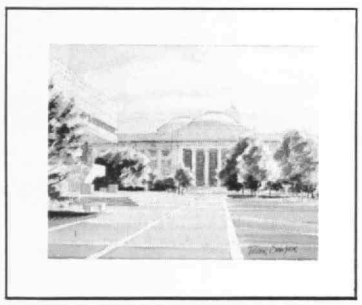

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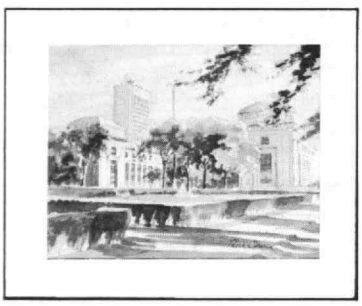

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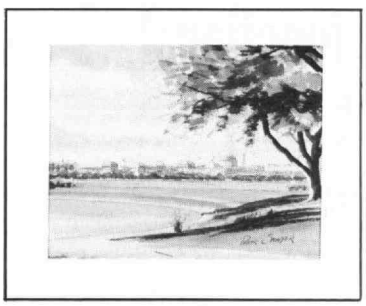

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Class News

'95

Our thanks to George D. Whittle, '08, 2550 Dana St., Berkeley, Calif., for an article in the Berkeley Daily Gazette Saturday, June 25, concerning our classmate **Robert Farquhar,** now 94 years old and active as usual. We quote: "Concerts have attracted Robert Farquhar since he was 12 years old. So it's not unusual that 82 years later he should still be sitting in the symphony audience. Mr. Farquhar is 94. Every week, for the past 10 years, this man with the face of pixie alertness has boarded the Symphony Bus with a group of his Claremont neighbors, for an afternoon of concert music and luncheon at Trader Vic's in San Francisco.

"After graduating from Harvard and M.I.T., and passing the rigorous competitive examinations of the Ecole des Beaux Arts in Paris . . . Farquhar, influenced greatly by the Chicago Exposition of 1893, which dramatically re-affirmed American architecture in the classical rather than modern style, became a professional architect. His buildings, primarily in Southern California, have included the W. A. Clark Library (willed to the University of California), the W. A. Clark Mausoleum, the library of the University of Nevada, Beverly Hills High School, the Festival Hall of the Panama Pacific International Exposition . . . Farquhar was also one of eight architects chosen to design the Pentagon building, in Washington, D.C. . . . Recently the Southern California chapter of the American Institute of Architects invited Farquhar to a November dinner which will honor his elegant, classical, California Club."—**Andrew D. Fuller,** Secretary, 1284 Beacon St., Brookline, Mass.

'96

The Alumni Luncheon Bulletin had '96, **Davis** and **Driscoll,** at the top of the list, but Bob didn't come because of the weather. I saw him looking his usual self at Yarmouth this summer; he still drives his auto. President Stratton's final address dealing with the humanities rather than statistics appealed to us all as a touching farewell. The Class of '16 came ashore in a replica of the craft that bore the Tech seal across the Charles River 50 years ago. The moderator's comments on the 50 and 25 year classes included '96 in the also rans. . . . A memo from **Charles E. Batchelder:** "I was 92 in April and still enjoying good health—my wife, Capitala, is in fairly good health. We have signed to go to Laguna Hills Leisure World to live in August. I still play the piano every day . . . I have written about 20 piano compositions (not published)."

Will and Dorothy **Coolidge** drove down and back from Florida where they spent two and a half months; while there Will gave a 15-minute phone talk to an audience of a couple of hundred at the opening ceremony of a new X-ray Department at Oregon State University; he could not tell how the audience responded. Formerly, the physician himself used the X-ray tube (just as John Rockwell did). Now it is in the hands of his technician, who may be trained in courses in colleges. The Coolidges have two great-grand-daughters, Becky, three and Ginny, one. . . . **Charles E. Stamp** died March 28, 1964. He lived in Rancho Santa Fe, Calif., since his retirement in September 1944. He is survived by his wife, Mrs. Minnie (Lee) Stamp and a daughter, Helen, (Mrs. Herbert Leisy) of 2401 Kenilworth Road, Cleveland Heights, Ohio.—**James M. Driscoll,** Secretary, 129 Walnut Street, Brookline, Mass.

'97

There seems to be a dearth of news regarding '97, though our faithful **Will Binley** was at the June Reunion. He has not reported his presence there. Tell us about it, Will. . . . Your Acting Secretary has been attending a New York group of ancients at monthly luncheons at the Chemists' Club, presided over by Gregory Dexter, '08. This pleasure he will have to forego, as his locomotive facilities do not make New York City street crossings safe. So news of the ancients will be limited. He is the only '97 attending, the others being youngsters of '05 to '14.—**George R. Wadleigh,** Acting Secretary, 70 Flower Avenue, Hastings-on-Hudson, N.Y.

'99

Edwin B. Mead, IV, was born June 30, 1875. He broke his hip in the fall of 1965 and later contracted pneumonia and died March 4, 1966. His daughter, Ruth (Mrs. M. D. Bullitt), Riverside, Calif., wrote that he enjoyed his birthday and Christmas cards from the secretary and was interested in the progress at M.I.T. . . . **Harry Keith White,** IV, was born in Brattleboro, Vt., on May 12, 1877, and died in Plainfield, N.J., on June 9, 1966. At M.I.T. he was a member of the Architectural Society and played the Banjearine in the Banjo Club. After his graduation from M.I.T. in 1899 he obtained a very thorough advanced course in the design and construction of large buildings with the famous firm of McKim, Mead and White (no relation) in New York. In 1909 the firm of Wilder and White won a national competition for the design of the state capital (famous for its large dome) at Olympia, Wash. Residences, public buildings (schools, libraries, hospitals, church edifices) in Plainfield and Brattleboro stand today as monuments to his talents, which he maintained at a high level by the study of classical works in trips to Europe and modern styles by contemporary construction. Later he was a consultant for York and Sawyer of New York until 1963. Harry was a very faithful attendant at the M.I.T. Alumni Reunions. He was an honorary member of the M.I.T. club of New York; a member of the Shakespearean Society of Plainfield, and a trustee of the First Unitarian Society of Plainfield. His wife Elizabeth

Happy Birthday

November marks the 100th birthday of one M.I.T. alumnus, while October marked the 95th for two others. In October four alumni were 90, ten were 85, and 12 were 80. In November four reach 90, seven reach 85, and 18 reach 80.

November, 1866—POMEROY W. POWER, '85, on the 26th.

October, 1871—ARTHUR C. NASH, '96, on the 21st; FRANK R. COOK, '96, on the 22nd.

October, 1876—MARY N. PHILLIPS, '03, on the 17th; WILLARD B. NELSON, '98, on the 20th; ARTHUR L. GOODRICH, '98, on the 25th; CHARLES A. HOLMQUIST, '06, on the 25th.

November, 1876—ROBERT LACY, '98, on the 13th; CHARLES A. NEWHALL, '00, on the 21st; JOSEPH C. RILEY, '98, on the 21st; FRANK TOOHEY, '03, on the 24th.

October, 1881—FREDERICK W. HINDS, '06, on the 4th; WILLIAM W. MARSTON, '04, on the 9th; STANLEY P. FINCH, '09, on the 10th; ARTHUR P. PORTER, '04, on the 11th; LEON H. SMITH, '04, on the 13th; SAMUEL L. WARE, '06, on the 14th; JAMES A. GRANT, '10, on the 16th; LEROY L. HUNTER, '03, on the 20th; FREDERICK C. LINE, '06, on the 21st; CHARLES G. LORING, '06, on the 23rd.

November, 1881—MAX C. RICHARDSON, '05, on the 3rd; CHARLES B. COX, '03, on the 4th; ARTHUR D. SMITH, '04, on the 14th; THEODORE F. STARK, '09, on the 14th; CHARLES E. SMART, '05, on the 19th; GEORGE W. PRENTISS, 2nd, '05, on the 27th; ROBERT J. KING, '03, on the 29th.

October, 1886—BARRY H. JONES, '09, on the 4th; GEORGE E. WASHBURN, '09, on the 4th; BENJAMIN I. WARNER, '10, on the 6th; PRESCOTT K. WADSWORTH, '10, on the 11th; M. HUBERT JUDD, '11, on the 14th; FRANCIS M. O'NEILL, '11, on the 15th; TOM W. SAUL, 10, on the 16th; WILLIAM R. HEILMAN, '08, on the 17th; RUFUS C. FOLSOM, '08, on the 24th; AUSTIN B. HENDERSON, '09, on the 25th; RUFUS CRANE, '11, on the 27th; LESTER W. PERRIN, '11, on the 29th.

November, 1886—WILFRED E. BOOTH, '08, on the 3rd; RALPH J. KARCH, '07, on the 4th; FRANK A. WOOD, '11, on the 7th; ALBERT HARKNESS, '12, on the 8th; ALFRED MULLHAUPT, JR., '09, on the 11th; CHESTER L. DAWES, '09, on the 13th; HARRY C. LORD, '08, on the 13th; ARTHUR E. BRADLEY, '11, on the 15th; CHARLTON D. PUTNAM, '08, on the 15th; HARRY WEBB, '09, on the 15th; LEAVITT N. BENT, '06, on the 16th; WILLIAM H. TOPPAN, '08, on the 19th; J. HOWARD CATHER, '12, on the 21st; EDWARD L. BRUNET, '10, on the 22nd; A. SIDNEY D. HERRESHOFF, '11, on the 22nd; HAROLD F. PARSONS, '10, on the 29th; LEANDER A. DOW, '10; EDWIN PUGSLEY, '11.

T. Randolph died in 1951 after a happy marriage beginning in 1912. He is survived by a sister and two sons, Leavitt B. White, Menlo Park, Calif., and Kenneth White of Plainfield and eight grandchildren. . . . At the Alumni Reunion in June our faithful Carroll W. Brown and his son William, '33; Fred W. Grover, Percy Witherell and Egilda Witherell, '44 enjoyed the day. . . . **Alfred W. Lombard** is in the Hancock House Nursing Home, 178 Lowell St., Lexington, Mass. . . . **Harold W. Beder,** in acknowledgment of his birthday good wishes, sends his greetings to all the class of '99.

James Driscoll, '96, and Percy Witherell, '99, represented the two oldest classes and individual ages at the Alumni Officers' Conference in September and both received many courtesies. The presentation of the problems was well planned, but the lectures given in the Green Building on the current studies in experimental medicine, lasers and yacht design gave us an insight into the outstanding research into the future. The words of wisdom in the perfect diction of Mrs. Karl T. Compton were greeted with an enthusiastic standing ovation of approval.—**Percy W. Witherell,** Secretary, 1162 West St., Wrentham, Mass.

'00

Llewellyn L. Cayvan died June 29, 1966, aged 87 years, at his home in Grand Rapids, Mich. He came to M.I.T. from South Boston and graduated in 1900 from the course in Chemistry. He entered the baking business in Chicago that year and in 1925 he went to Grand Rapids with the Heckman Biscuit Company, where he remained until his 75th birthday in 1954. He was a member of the American Chemical Society and the first president of the Biscuit Production Club. He apparently was very early in the application of chemical principles to commercial baking. Aside from business Llewellyn was devoted to music. He began playing the violin when he was four years old and as a youth he was a sometime member of the Boston Symphony Orchestra. At Grand Rapids he was principal viola player in the Grand Rapids Symphony Orchestra for 11 years. He became interested in the music program at the Christian Reformed Church's Calvin College and over the years taught many students to improve their technique. He instituted Saturday afternoon chamber music sessions at his home. These were sight reading practices which would often involve as many as 15 selections. He owned many fine stringed instruments, some of them rare, and permitted the students to practice on them. He contributed to Calvin College some fine instruments and a collection of more than 11,000 recordings and one of the largest collections of sheet music for stringed instruments in the nation. He and his late wife, Alice, who played the viola and timpani, were members of the orchestra at Calvin's first presentation of its now traditional Messiah performances, and they continued for 20 years as musicians in the college's Oratorio Society. Llewellyn is survived by his wife, Winona A., whom he married 14 years ago.

The Alumni Register Office has received a belated report of the death on September 23, 1965, of **Raymond E. Farwell.** He was at M.I.T. with us but one year, coming from Turner's Falls, Mass. We have heard very little from him over the years. He was reported in 1910 as being manager of the Ryegate Paper Company of East Ryegate, Vt. Since that time his address has been Wells River, Vt.—**Elbert G. Allen,** Secretary, 11 Richfield Road, West Newton, Mass. 02165

'01

The principal class news for this month is a list of our classmates who have died during the summer. **William T. Aldrich,** IV, S.B., passed away on June 2. . . . **Edward P. Beckwith,** V, S.B., died on July 5. . . . **Lyman H. Bigelow,** I, S.B., died in Hawaii on June 19. . . . **Leonard D. Chandler,** II, S.B., died on January 24, 1966. . . . **Robert M. Derby,** I, died on February 14, 1966. . . . Next month I will tell what I know of these different men. If any of you have any information about any of them please let me know.—**Theodore H. Taft,** Secretary, Box 124, Jaffrey, N.H.

'02

Our class was represented on Alumni Day by Arthur L. Collier, Charles Kellogg, and Lewis Moore and their wives. Kellogg had attended the wedding of his grandson in Concord the previous Saturday.

A note was received from **C. F. Gardner** of East Sandich congratulating me on reaching my 85th birthday and inquiring how many of my classmates were living. The query was answered as of April (53), and as of today it is three less, as word has been received through the Alumni Office of the deaths of **William N. Brown,** Course VIII, in November 1965, of **Humphreys Milliken** on February 24, 1966, and **Claude E. Patch** (Dan) on August 15, 1966. Brown was a native of Gloucester, having been born there November 15, 1878. He prepared for M.I.T. in the public schools of that city. After leaving M.I.T. he was first with the De La Vergne Diesel Engine Company, in New York City and later the Worthington Pump Company in diesel and marine service, first as an engineer and then in sales in New York territory. He then spent about 10 years with the Joseph L. Sheldon Engineering Company of Cleveland, Ohio, covering Ohio and Indiana, on power plant contract work. During World War II, he was assistant chief, Trial Board at Great Lakes out of Chicago Maritime Commission, covering acceptance trials of diesel ships. After the war he was located with the Navy Bureau of Ships in Washington and Philadelphia estimating, recording, and tabulating specifications on Navy pumps, feasible and realistic load times for both critical and noncritical pumps. This was concerned with plant loading schedules with details for IBM cards. Brown retired in April 1957 on account of age and service time and took up his residence in South Weymouth, Mass. It should be said here that he took special pride in the fact that while a student at M.I.T. he posed for the Ernest Fosberry painting from which the sculptor Henery H. Kitsore designed the heroic statue of Roger Conant, which stands here in Salem's Washington Square.

Humphreys Milliken, Course VI, was born in Somerville, Tenn., and prepared for M.I.T. at Columbia University. He started his professional career with the Testing Department of the G.E. Company at Schenectady; in 1905 he was instructor in Electrical Engineering at the Case school of Applied Science at Cleveland. Later he was with the N.Y. Edison Company and W. A. Barstow and Company, first in Portland, Ore., and then in New York City. In 1925 he became associated with the Montreal Light, Heat and Power Company of Montreal, Canada, and remained with them until his retirement.

Claude E. Patch was probably better known to the most of his friends and acquaintances as Dan Patch, a name which he received during the popularity of the famous pacer by that name who broke the world's record for the mile. Our classmate was born in Woburn, Mass., March 10, 1878. He attended the public schools of Stoneham and graduated from high school in 1897. He entered M.I.T. with the class of 1901 but at the end of his freshman year enlisted in the 6th Mass. Regiment of U.S. Volunteer Infantry and served in Cuba and Puerto Rico. When his regiment returned to the States he was left behind in the hospital at Utuado laid up with typhoid but came out of it and was returned home. This service forced Dan to continue his studies with the Class of 1902, with which he took his degree in Naval Architecture and Marine Engineering. Up to 1914 he had worked in the Marine Department of the Maryland Steel Company at Sparrows Point, Md., and the Peter Conley Company in Pittsburgh and Leetsdale, The Newport News Shipbuilding Company at Quincy and the U.S. Navy Department at the Boston Navy Yard. In March 1914 he left the Navy Yard to make a connection with Morton C. Tuttle, then the general manager of the Ahethaw Construction Company, an association which continued through the years. During the first World War Dan went to Washington and helped organize the expediting activities of the Supply Division of the Emergency Fleet Corporation. Then he took over the Registration Branch and was able to handle the increasing load with half the number of people. In this work he had the assistance of **Carlton B. Allen,** '02, and that of Charles C. Turner, an old friend of his shipyard days. In the Second World War he set up the system for following Naval Shipyard programs in a hundred or so yards and suggested the use of the "E" flag which became such a feature in the overall production effort of industry during the war. He also helped to organize

the tug building program of the Water Transport of the Army. Patch remained with the Morton C. Tuttle Company through the years until it dissolved and closed down in October, 1960. He had been Treasurer of the company and besides attending to the duties of that office had acted for the firm as consulting industrial engineer in territory extending from Maine to Hawaii and from northern Minnesota to southern Texas. After the Tuttle Company closed Dan decided to leave Stoneham and live in Friendship, Maine, where he already had a summer home. He resided there until his death last August.

Dan had an interest in many phases of life aside from his professional career and held membership in military, historical, patriotic, and social organizations. His church, the Baptist of Stoneham, was of special interest and he served in many capacities with characteristic energy and foresight. As a Tech alumnus he was interested in all the activities of the Institute and served our class as General Chairman of our 50th Reunion, at which he was elected Class President for the next five years. He was our Class Agent and for about 10 years preceding his move to Friendship was one Class Representative on the Alumni Council. As Dan willed his body to the Harvard Medical School for "educational and research purposes," there were no usual funeral services, but memorial services were held at Friendship on August 25 and the First Baptist Church, Stoneham, on August 28. Our Class was represented at the latter service by **Ambrose Bourneuf.** Patch's wife, the former Nellie Ira Keene whom he married June 14, 1905, died last December, but their son Eldred K. still lives in Friendship and an adopted son, Austin Addams Patch, lives in Mansfield, Ohio. He also left two brothers J. Alfred of Carlisle, and Ernest L. of Vallejo, Calif., and a sister, Miss Esther Patch of Boston.

The following letter has been received from **George T. Eagar,** Old Forge, N.Y.: "For the past 20 years I have been a Forest Ranger for the N.Y. Conservation Department, for the 7th Lake Area of the Fulton Chain. I resigned this year but they had no one to take my place, so asked me to go on again for another year. Half of this lake is part of the forest preserve and the other half is thickly populated. There is an organization formed by the cottagers called the Seventh Lake Association and last year I was elected President. I am also a past President of the Ballston Spa Rotary and have been elected to honorary membership every year since retiring from business. We expect to move to Florida this winter (have been there for the past 14 winters) and our address will be 29 N.E. 109th St. Miami Shores, 33161. I hope to make the class Reunion next year."

Notice of two changes of address have been received through the Alumni Office: **Harlen M. Chapman** is now at Winter Park Towers, So. Lakemont Ave., Winter Park, Fla. 32789, and Miss **Edith A. Beckler** is at Vernon Hall, 9 Dana Street, Cambridge, Mass. 02139, a nursing home. . . . **Arthur L. Collier** reports that on his annual trip down into Maine with Mrs. Collier they stopped in Brunswick and had a pleasant call on Robinson's widow, Mrs. Grace Robinson.—**Burton G. Philbrick,** Secretary, 18 Ocean Ave., Salem, Mass. 01970

'03

The summer period with absence of customary Alumni news, has been a boon to the zealous labors of all your Class Secretaries. Our classmates no doubt have in turn enjoyed the interval with abundant relaxation, esprit and even optimism for our 65th Class Reunion. However, the busy schedule of our M.I.T. organization, being true to the symbolic beaver, never ceases. Accordingly, the NASA Electronic Research Center about Technology Square has added momentum. It reports 106 research and development awards, totaling $5,438,160 since it began operation September 1, 1964. The personnel strength, formerly 435, has become 500 by June 1 and at full strength the employment will reach 2100 persons. This group will be equally divided between scientific and engineering technical support and administrative personnel. Individual contracts to industry and universities averaged $52,000. They support an extension interval research program under way at the Center's temporary laboratories and offices at Technology Square.

Dr. Thomas K. Sherwood, '24, a distinguished member of the faculty, has been appointed the first to occupy the Lammot du Pont Professorship of Chemical Engineering at M.I.T. The chair was established by a $500,000 gift from members of the family of the late Lammot du Pont, who graduated from M.I.T. in 1901. He was president of E. I. du Pont de Nemours and Company from 1926 to 1940 and then chairman of the board until 1948. Professor Sherwood is one of the world's leading authorities on fluid flow and mass transfer. His book, Absorption and Extraction, published in 1937, was the first significant text in this field and after revisions, continues to be the leading textbook. A dimensionless group widely used in engineering, "Sherwood Number," recognizes his eminence as a pioneer in the study of mass transfer.

The Alumni Officers Conference on September 9 and 10 affords a welcome reunion for all fellow Alumni Officers on the M.I.T. campus. Quarters at Baker House provided opportunity to participate in the various workshop sessions and exchange of ideas for long range goals of the Alumni Association. Also scheduled as part of the program was the dedication of the new Whitworth Pierce Boathouse. . . . Announcement of a new series of textbooks for a two-year introduction course on college physics, developed by M.I.T., has been selected and published by the W. W. Norton Company Inc. of New York. The choice was made by Professor Robert I. Hulsizer Jr., director of the M.I.T. Science Teaching Center, which was established in 1960 to develop new science courses and new

J. Howard Pew, '03

methods and materials for teaching. Commercial publication of the books will make possible their use in colleges throughout the country. The books will probably be issued both in paperback and cloth editions. Publication in the spring of 1968 is anticipated. The first four volumes of the series, in mimeographed form, were used experimentally in teaching a small group of freshmen at M.I.T. during the 1963-64 year. After testing and revision, they became the standard text material for a new physics course given to all freshmen for the first time in 1964-65. It is a subsequent revision of these four volumes that will be published in 1968.

A cheerful note was received from **Stanley A. Foster,** X, of Lowell, Mass., stating that his absence from our last Commencement was not due to any illness. He still meets his daily problems (not Calculus) and thinks it now "much better to keep closer to home, which is safest in this troubled world." . . . **Arthur B. Allen,** II, writes, "My dear wife passed away last March and I am now living with a stepson at a new address, 1745 Coit Ave., East Cleveland, Ohio." He thanks the good Lord for his present good health at 86 years of age.

Our dynamic classmate, **J. Howard Pew,** II, has recently emerged into great prominence. Long residing in Philadelphia, he has been a militant and active oil man for 65 years and has been proclaimed the Grand Old Man of refining in the petroleum industry. Howard joined the Sun Oil Company after graduation from M.I.T. in 1903 as engineer at the new Marcus Hook, Pa., refinery. In 1912, on the death of his father, Joseph N. Pew Sr., who founded the company in 1886, Howard became President and served until 1947; then was Chairman of the Board until 1963. A new process for producing lubricants from asphaltic crude oil was developed by Pew and associates in his early years. He has been in the middle of world wide petroleum policy since. Howard became a member of the American Petroleum Industry when it was first organized after World War I and served on its Council during World War II. He was vice-chairman for refining for eight years and now is an honorary member of the board. He was honored along with other industry pioneers in special ceremonies at the International Petroleum Exposition, May 15, at Tulsa, Okla., with the A.P.I. Gold Medal. This year Howard is serving his 60th year as a member of the board of directors of the Sun Oil Company. In his years as company President he furthered an employee profit-sharing policy and summed up his philosophy with recent comments, "No business is truly successful unless its suc-

cess means something substantial for its workers." Sun Oil Company never had a strike nor work stoppage. "We have never sought special privileges nor a sheltered position." Thus Howard has addressed many business and religious groups in the past 20 years. He is on the executive board of the Valley Forge Boy Scout Council of America and received the Silver Beaver Scouting Award. The Franklin Institute of Philadelphia has honored him for his humanitarian, civic, philanthropic and religious fields.

We regret to announce the sudden death of our well-known classmate, **J. Arch Mears,** VI, at Scranton, Pa., on June 18. Arch Mears was always active among us and particularly so among all his engineering associates. His work during World War I was outstanding. In 1915 he organized the South Brooklyn Machine Corporation for the purpose of producing three-inch shells for the English Government. Under his supervision all necessary equipment was designed, including machines for gauges and special requisite tools. In a short time the plant was producing from 100 to 1200 shells a day, working day and night. As the war progressed the American shells for the war were produced. Arch leaves a devoted wife after long years of happy companionship, Mrs. Mary B. Mears, 526 West 114th Street, New York, N.Y.

Our loyal coed classmate Miss C. Lillian Gleason, VII, has passed on July 1, after an unfortunate accident causing a broken hip at her Rest Home, High Street, Medford, Mass. Miss Gleason was an enthusiastic classmate to the end and eagerly awaited our Class News on The Review's arrival. She was born in Medford and after graduation from M.I.T. in 1903 spent over 23 years with success and enjoyment with the Cleveland, Ohio, Board of Education as physical therapist. Miss Gleason celebrated her 85th birthday on February 10, 1965, with a host of her old-time friends. . . . The death of **Charles S. Glenn,** VI, of 195 Prince George St., Annapolis, Md., has been received, with no date or pertaining information from the Alumni Office. . . . Our birthday greetings for their 85th go to **Benjamin D. Solomon,** VI, on July 2, of 1878 Commonwealth Ave., Auburndale, Mass.; **Philip B. Rice,** VI, of Blue Ridge, Summit, Pa., on July 22; and **John J. Dooley,** VI, of 137 Fern Ave., Lyndhurst, N.J., on July 26.—**John J. A. Nolan,** Secretary, 13 Linden Ave., Somerville, Mass.; **Augustus H. Eustis,** Treasurer, 13 State St., Boston, Mass.

'04

The class of '04 celebrated Alumni Day at the Institute with only four representatives present, Mr. and Mrs. **Maynard Holcombe,** Mrs. Carle Hayward and yours truly. Maynard and his wife have changed very little over the years, are still playing golf regularly and enjoying the sunshine of the state of Florida. The whole year around. . . . The Alumni Fund received a great boost from the 25th, 40th and 50th classes. The latter surpassed all records by contributing over three million dollars. . . . I received a nice letter from **George Kaiser** who seems to be enjoying good health. He is keeping active taking care of his lawn, trimming the hedges and raising beautiful flowers in his garden. In his letter he stated that Mrs. Kaiser had a very serious operation and was not recuperating too well, but as we go to press I learn she passed away about two weeks ago. I express my sorrow and that of my classmates at receiving this sad news.

It is also my sad duty to report the death of our Class Agent, **Louis Bouscaren** on August 4. He was a wonderful man, a loyal friend of M.I.T. and the class of 1904. He worked continuously for their best interests. A man of great integrity and high principles, he will be mourned by us all. Our sincere sympathy goes to his wife. . . . Our good friend and general companion, **Frank Davis** has been having his troubles this last year fighting a battle with sciatica. He was unable to go south as usual this spring on that account. Getting around on crutches is some handicap. I hope after a vacation at the Black Ring Ranch he is feeling much better.

The Russell family had a very bad summer. Mrs. Russell had a bad fall in early June and broke her right hip and in late July had a second accident and broke her left hip. She is doing fairly well and with the help of a "walker" is able to get around. Her courage is good and we think she is doing wondrefully well. . . . The Alumni Office has informed us of two other deaths but we have no information or details. They are **Theodore A. Samnis, Jr.,** of The Dalles, Ore., and **William H. Eager** of Ithaca, N.Y. . . . I am sorry to have so much bad news this issue but perhaps some of you will write something real cheerful for the next issue.—**Eugene H. Russell, Jr.,** Treasurer, 82 Stevens Road, Needham, Mass.

'05

Our 61st Reunion was expectedly considerably short of our 60th both in attendance and activities. However, our attendance at the Alumni Luncheon was proportionally as large. Present were Bert Files, with son Dick and daughter-in-law, Sheri, Leonard and Beatrice Cronkhite, Gilbert and Elizabeth Tower, Gil Joslin, Doc Lewis, Izzy Nye, Hub Kenway, Henry Buff, Art Balkam, Herman Gammons and son (also an M.I.T. alumnus) and Ruth and I. Myron and Rose Helpern were "listed," but an erroneous weather report in the morning had led them to believe an indoor lunch imminent. The weather was not in keeping with previous Alumni Day weather, but we "shivered" it through. Incidentally when I talked with **Hub Kenway** he referred to **Doc Lewis** as our "famous but modest Vice-president, Doc Lewis. I have not seen any official notice of his election, but it took place during our 60th. Doc is hard at work on a new book to be entitled 'Gratitude.' Doc is all for it." So we have that to look forward to with gratitude for a complimentary copy.

My letter of mid-August to existing classmates (about 60 announcing a class-dues assessment and appealing for class news was exceptionally successful in both respects; in fact so much class news that I will have to condense it so much that it may discourage the editor, or postpone some until the next issue. I choose to do the latter, so if your reply does not "hit the street" pronto, please be patient—there are eight more issues coming.

I am taking these replies in no special order. Kenneth Fuller of Lenox, Mass., writes that his brother Laurence, II (see Football Team 1906 Technique), had a bad accident two and a half years ago, from which he recovered fairly well. Since that time he has lived in the Jesmond Nursing Home, Nahant, Mass. He is comfortably situated, is up and about and keeps in good spirits, although his physical activity is severely restricted. . . . From **Errett M. Graham,** I: "I'm sorry none of our three children gave us any grandchildren to brag about. There is a married daughter Mary (Mrs. Loren Hibbard), Secretary at Garfield Junior High School in Berkeley, Calif.; a son Ernest, graduate of Cal Tech, consultant at Boeing's Scientific Research Laboratory; a daughter-in-law, Ernest's wife, Beverly, also working at BSRL, an M.S. and Ph.D. of M.I.T.; an unmarried daughter Martha, with Doctors degree from Cornell also at BSRL. I've been too busy grading a new road on the place to have time for my favorite diversion, canoeing. However, last time I paddled over to the County Commissioners meeting at Friday Harbor, I returned the long way around —thus making the 20-mile circuit of the Island. The time before that fog closed in on me and I could see no land for an hour, but I could see where the sun was and so didn't get too far off course—and the time before that I was rained on all the way home. But those are just pleasant memories. Himalaya blackberries grow wild out here, also the Evergreen variety. Picking them is something of a job, but they are worth it."

From **Carl** and Anne **Atwood:** "Anne and I have joined the 'Road Runners' Club; symbolized by that long-legged, long-necked bird which prefers to run like lightning rather than fly and is the state bird for New Mexico. We had a wonderfully surprising trip there last year on our way back from Chicago to Boston. Somewhat round-about but I recommend that system when you can find the time and occasion. Our occasion was our convention of handwriting-analysts at Chicago . . . Then through the Ozarks, Carlsbad Caverns, Roswell, N.M., where the water softener plant is being tested by the U.S. Government and on to Tucson, Ariz., where we stayed a week. To Flagstaff, Grand Canon, Phoenix, then back to Chicago through Denver, Omaha, etc. Flew to Boston from Chicago and would enjoy doing it all over again." Carl goes on to tell of several other trips around the U.S.A. which emphasizes the fact that they are today probably the "Class Road Runners" and that they must be hale and hearty.

From **Jim Barnes,** VI, at Miami: "Yes, we're still pushing 'em thru the sky but just now our most intriguing (to my unsophisticated mind) is the design of a building which can enclose a B-32 and produce conditions which would simulate its flight from a desert area—at say 120°F—to outer space or upper atmosphere, at say, 350°F—in the few seconds or minutes it would actually take to accomplish that altitude. Believe me the BTU's and the horses concerned are in what we used to regard as astronomical figures! (P.S. I still do.)." . . . From **Sam Seaver** XIII of Markham, Ontario: "We now have nine grandchildren. It may surprise you to know that I will be 85 the 14th of this month. Am in prime health and do work around the place. Some days I put in four to five hours. Sometimes I just loaf."

From **Bob Beard,** I, of Berkeley, Calif.: "Helen-Mar and I flew to New York on June 17 to visit our first great grandson, Theodore Engvaaldt Larson III, of Orange, N.J., and to share in renaming my son's oldest daughter, Mrs. Vernon L. Strawhand of Baltimore, Md. Since our return we have made botanic field trips up the Feather River Canyon, up the coast to Ft. Bragg and a long trip that took in the Shasta Dam, Mt. Shasta, the Klamath Lakes, the Siskiyou Mountains and the 30-mile rim drive around Crater Lake in Oregon. Crater Lake is a grand spectacle. It was formed several thousand years ago when the 12,000 ft. high Mt. Mazama blew out its insides and swallowed its top 5000 ft. By the way, we visited the Statue of Liberty while in New York and climbed up and down the grand old lady's backbone from the boat to her wig. That's something for some of our other old characters to try." . . . From **Tom Geraghty,** III, of Chicago: "Am 84, in excellent health, married 52 years, my son a lawyer, five grandchildren, oldest grandchild just graduated from Harvard,

Deceased

MRS. FRANCIS H. POUGH, '92, June 15
HARRY M. LATHAM, '93, Summer 1966
ARTHUR S. KEENE, '98, May 14
EDWIN B. MEAD, '99, March 4*
HARRY K. WHITE, '99, June 9*
HENRY M. BROCK, '00, September 8
LLEWELLYN L. CAYVAN, '00, June 29*
RAYMOND E. FARWELL, '00, September 23, 1965*
WILLIAM T. ALDRICH, '01, June 2
EDWARD P. BECKWITH, '01, July 5
L. HERBERT BIGELOW, '01, June 19
S. WINTHROP ST. CLAIR, '01, June 2
ROLAND E. SIMONDS, '01, June 7
WILLIAM N. BROWN, '02, November, 1965*
HUMPHREYS MILLIKEN, '02, February 24*
CLAUDE E. PATCH, '02, August 15*
MISS C. LILLIAN GLEASON, '03, July 1*
CHARLES S. GLEN, '03
J. ARCHIBALD MEARS, '03, June 18*
LOUIS H. G. BOUSCAREN, '04, August 4*
WILLIAM H. EAGER, '04, June 18
THEODORE A. SAMMIS, JR., '04, November 20, 1965
EDWARD L. DAVIS, '05, January 18
CHARLES L. DEAN, '05, May 11*
BARRY C. EASTHAM, '05, April 26*
JOHN H. FLYNN, '05, March 8*
FREDERICK V. E. JOHANSSON, '05, June 28
EDWARD C. SMITH, '05, June 20*
MRS. HAROLD F. (MILDRED WHEELER) TOMPSON, '05, August 11*
HARRY WIGGIN, '05, June 16
HOWARD L. MARSH, '06, February 5
FREDERICK BACHMAN, '07, May 13*
CHESTER M. BUTLER, '07, January 13*
ANDREW N. REBORI, '07, May 31*
JAMES P. STOW, JR., '07, February 8*
ALEXANDER H. VANKEUREN, '07, July 3*
MAURICE E. ALLEN, '08, April 6
CARL S. BLOEDE, '08, June 30
MORTIMER P. BURROUGHS, '08
WALTER E. CALDWELL, '08, August 11
GEORGE E. FREETHY, '08, June 7
RUSSELL T. HYDE, '08, June 19
HAROLD W. WELLINGTON, '08, April 18
HOMER C. BENDER, '09, February 16
HENRY H. MARSHALL, '09, June 19*
EARL M. SMITH, '09, July 7
GEORGE E. WASHBURN, '09, August 30
FRANK H. HILL, '10, July 19
GEORGE F. MAGLOTT, '10, June 6*
HAROLD R. PERRY, '10, November 24, 1965
HENRY M. SCHLEICHER, '10, May 31*
FREDERICK W. COVILL, '11, April 21
KINGSLEY W. DENNETT, '11, April 16
GEORGE B. FORRISTALL, '11, September 2
RALPH A. HOLBROOK, '11, April 22*
CHARLES A. LINEHAN, '11, June 21*
ARTHUR H. ROONEY, '11, April 4
STANLEY N. WHITNEY, '11, June 23
HOWARD F. CLARK, '12, August 19
H. MALCOLM PRIEST, '12, August 27
HOWARD P. FESSENDEN, '13, April 19*
HEISLER HARRINGTON, '13, December, 1965
MAX H. HARRINGTON, '13, May 12*
M. I. OMANSKY, '14, August 31*
CLARENCE L. SMITH, '14, July*
HARRY M. WYLDE, '14, May 19*
DONALD BELCHER, '15, May 29
TAKANG KAO, '15, June 16
ELMER H. NEUMANN, '15, March 3
HERBERT D. SWIFT, '15, September 21
GEORGE W. WYMAN, '16, April 11
EDWIN J. GRAYSON, '17, June 18*
WINFIELD I. MCNEILL, '17, September 3*
JOHN M. MERTZ, '17, March 14*
DEAN H. PARKER, '17, June 27*
E. OLNEY HERMAN, '18, June 4
RICHARD F. CASHIN, '19, April 17
HAROLD K. IRELAND, '19, November 14, 1965
JOHN F. LAVAGNINO, '19, November 30, 1965
ALLAN M. BUTLER, '20
WILLIAM M. B. FREEMAN, '20, May 24
EUGENE A. NEBOLSINE, '20, April 27*
ARTHUR WILSON, '20, April 6
EDMUND G. WILSON, '20, September 17, 1965
LEONARD R. CHURCHILL, '21
JUNG-AN LO, '21
HORACE B. AMBLER, '22, May 22
ROBERT S. BARR, '22, July 26
HAROLD J. CHAPMAN, '22, September 8
SIGMUND COHEN, '22, August 21*
FRANK P. COOMBS, '22, May 6
ARNOLD E. HOWARD, '22, July 4*
SYDNEY M. STRAUSS, '22, September 15
JOHN H. TEETER, '22, April 12*
JACK A. TISHMAN, '22, April 18*
LESTER S. CHAMPION, '23
EDWARD M. CONLEY, JR., '23, July 25*
GEORGE F. COOK, '23, July 23
ERNEST N. GELOTTE, '23, August 7
WILLIAM H. HARDING, '23, July 5
ROBERT E. IDE, '23, Spring 1965
RAYMOND H. STARR, '23, August 21
WORTHINGTON L. WEST, '23, June 21
JAMES H. BISSLAND, JR., '24, May 26*
E. DONALD EARLY, '24, December 18*
E. WINTHROP HALL, '24, July 18*
D. ARTHUR STRAIGHT, '24, July 23*
FRANLIN G. TYZZER, '24, May 22*
PHYLIP H. CARRIER, '25, July 13
EDWARD W. COUSINS, '25, July 14*
LESLIE G. GREEN, '25, June 4
FRANK R. HARRIS, '25, January
CYRUS HOSMER, JR., '25, June 28*
JOSEPH S. LANIGAN, '25, April 20*
NATHAN CIVEN, '26, July 30, 1965
B. VARNUM HOWE, '26, February 1966
WILLIAM KALKER, '26, August 18
EDWARD R. WAYNE, '26, June 30
CHARLES G. HALPINE, '27*
LEE E. HILDEBRAND, '27, December 23
JOHN R. HOOPER, '27, January 15
FRANK MARCUCELLA, '27, July 11*
LESLIE O. PATTEN, '27, March 27
VICTOR H. SCHUEG, '27, May 17*
CONSTANTINE S. STEPHANO, '27, September, 1965*
JOHN H. WILSON, '27*
CHARLES W. ROGERS, '28, August 1
RICHARD M. SAWYER, '29, May 30*
LESLIE BERMAN, '30, May 8*
LINGURN H. BURKHEAD, '30
CHARLES K. GAILEY, JR., '30, May 21
RICHARD C. JACKSON, '30, May 26*
EDMUND L. KOPERSKI, '30, October 29
J. HAROLD GENRICH, '31, July 7
WALFORD WALDEN, '31, December 1
THOMAS C. WRIGHT, '31, April 30
WILLIAM H. RADFORD, '32, May 9*
JAMES L. HIBBARD, '33, December 5
ALFRED H. MUNSON, '33, April 7*
WALTER G. DONALD, '34, May 17
RALPH N. GEIL, '34, June 28
RICHARD Y. MINER, '34, July 18
BERNARD FREIDMAN, '35, September 13
GEORGE KUMPE, '35, June 25
CLIFFORD P. ROUNSEFELL, '35, May 24
JOHN J. WAFERLING, '35, November 8, 1965
JOHN S. WALKER, '36, December 5
ALDEN E. ACKER, '37, June 10*
DAVID RICHARDSON, '37, August 1
WALTER W. LANDSIEDEL, '38, October 12, 1965
EDWARD K. MCGILL, 3D, '38
GEORGE O. SCHNELLER, '40, August 12
OLAF A. BREDESON, '41, June 2, 1965
WALTER D. HUDSON, '41, May 29
ERNEST P. ABRAHAMSON, '42, July 20
FRISBEE J. FULLER, '46, August 28, 1965
GEORGE F. GRIESS, '46, July 3
ROBERT W. BOND, '47, July 15
W. SCOTT KNOWLES, '48, July 3, 1965
JACK D. EGGERMAN, '49, June 27*
RICHARD M. CALDWELL, '53, June 7
EBEN O. SMITH, '53
HENRY N. IGO, '56
JOHN S. STRANO, '59, May 23*
ROBERT R. THOMPSON, '59, August 6
EDWIN H. HETRICK, '60, December 26
DAVID W. BEARDSLEY, '62, April 12*

*Further information in Class News.

class of '66."

From **Chet Shaw,** VI, of Miami: "As you know, Isabelle and I are residents of Florida. We never yet, however, have spent a summer there. For 15 years after my retirement we traveled about in our house trailers. We sold our travel trailer in the spring of 1965, and sold our mobile home last April. We now have an apartment in St. Petersburg for our winter occupancy. Here in the north, we have an apartment in No. Abington, where we have spent the last two summers. We still drive the 1500 miles up in the spring and back in the fall, but we have done it so much that it is becoming a chore, although it is much easier and faster than it was 15 years ago."

From **Willard Simpson,** I, of San Antonio: "I have finally practically retired from the business of W. E. Simpson Company, Consulting Engineers, which I established here in 1909. However, I have a desk in the office and feel as though it only right that I take care of some of the old old clients who come in and ask questions and solicit our services for certain jobs that I know more of than any of the rest of them here, particularly these old clients who have been with us so long. That means that I do very little. My son, and I am very thankful, is taking over the business with Mr. Gerhardt who has been with me for many years. I think Willard is doing much better than I could ever do at the job because he is younger and more energetic and has a more un-obstructed vision. Though I think Consulting Engineering offices are being attacked by large construction organizations that are trying to crowd them out, still, there is some die on the part of some owners who have the personal service of an experienced engineer for many years operation. My son and the new organization take care of all the new types of jobs which generally have more intricate details and more difficult structural requirements than ever, particularly now, when those who are building any kind of structure simply want to make a big show. Extremely large engineering concerns who practice or endeavor to practice all over the world are busy taking care of the government foreign aid giveaway programs, so the old time private special engineer practicing as a professional and not as a promoter is gradually being crowded out, except among an older class of older clients which he has built up and maintained over the past few years. That is about how we stand. My son seems to be adapting to the new requirements and I hope he can continue successfully in business which I originated over 60 years ago and have been at continuously ever since."

As I have stated before, reporting deaths of our classmates is not merely a matter of reporting or statistics. Through my 36 years as Secretary of the class, I have come to know most of our classmates, their families, their natures, through considerable correspondence as well as contact at reunions, and in some of their homes. I am intimately acquainted with many I do not remember ever seeing either while at M.I.T. or elsewhere. So it is with considerable emotion that I have to inform you of those whose deaths I have heard of since my last writing.

Capt. **John H. Flynn,** II, died at Buenos Aires, Argentina, on March 8, 1966. Jack had attended our 60th, with his Argentinian wife, Susana, whom he brought as a bride to our 50th Reunion. She had sent me several clippings from Buenos Aires newspapers, but, unable to read Spanish, I had given them to a friend here for interpretation. I tried today to reach her to get these translations and, finding her away for an indefinite period, I will have to postpone these until another issue, but I do have a letter from Susana, which will suffice for the present. I quote: "I should have written to you long ago but it is very hard for me to do it, feeling as I do so low and so lonesome. Because I imagine you still don't know that my dear Jack left me quite suddenly on March 8. We were out in our country place all February with my niece and her children and although Jack had passed out one evening and recovered immediately he was feeling well, in general. On March 6 we came back. Monday he went to his office, told everybody he was very well. Had lunch as usual at the American Club with his friends and came back home full of life and projects. We went to bed and at 5 o'clock I awoke; in a few minutes he was gone, never regained consciousness. For him it is a perfect end because he was active up to the last minute. All this month I have been thinking of our beautiful reunion last year and how Jack enjoyed seeing his old friends and his dear Old Boston.

"Although Jack was so modest, his personality was very exceptional and it was proved by all the obituaries published in all the papers of Buenos-Aires where he died. As they said so well after he retird from Armco at the age of 65, he built up two new businesses in this country: the china factory that everybody knows in Buenos Aires called "Porcelana Americana" and a big barrel factory (one of the three we have in this country) I.P.S.A.M. which is a very important and well known business too . . . I still thank you for your kind reception last year and giving Jack such an interesting meeting with his 'old pals.'"

Charles L. Dean, III, died at Carmel, Calif., on May 11, 1966. I have been able to obtain an obituary from the "Monterrey Peninsula North" of May 12, from which I quote: "Charles Lake Dean, resident of the Carmel area for the past 28 years, died last night in a local hospital after a brief illness. Mr. Dean was born March 24, 1882, in Pittsburgh, Pa. He was graduated in 1905 from the Massachusetts Institute of Technology as a mining engineer. After a year in Old Mexico, he went to Denver, Colo., in 1907 and joined Sterns, Roger Company, a firm of contracting and designing engineers, of which he became Vice-president. Mr. Dean sold his interest in the firm and retired in 1929 and after a year in Europe, went to live in Los Angeles. In 1938, he and his wife, Julie, came to Carmel, where they built a home and resided until two years ago, when they moved to the Hacienda in Carmel Valley. In addition to his wife, survivors include two daughters, Mrs. Victor (Beth Dean) Carell of Sydey, Australia, and Mrs. G. C. (Georgette Dean) Kehmeier of Denver, Colo.; a sister, Mrs. A. D. Kendall of Portland, Ore.; and two grandchildren, Dean and Melanie Kehmeier." I can add nothing as I had not heard from Charlie for many years.

Edward C. Smith, V, died on June 20, 1966, at a nursing home in Lakewood, Ohio, at the age of 89. Through an executor of his estate I received an obituary written by Smith himself in 1945. Also a "Who's Who" statement of work accomplished written by a friend for use in newspaper publications at the time of Smith's death. These cover three entire typewritten sheets—impossible for reproduction here. However, if any of Smith's friends wish the complete summation, I will gladly send a copy. Briefly, he retired from business in 1945. He continued his activities in church and professional societies, also his avocation of genealogy up to 1963. His health deteriorated hereafter and he had lived since 1964 in the nursing home. He was born in Worcester, Mass., attended Worcester Academy and graduated with a B.A. at Amherst College. He was with National Carbon Company from 1905 until 1943. He was a life member of both the Electrochemical Society and the American Chemical Society, also the Mayflower descendants.

Harry Wiggin, II, died at his home in Malden, Mass., on June 16, 1966. Apparently his stay at M.I.T. was brief. . . . Mrs. **Elinor W. Gardiner,** VII, died in Brookline, Mass., some time in 1963. She, as Elinor Whitney, took special courses in biology in 1902-3. . . . **Edward L. Davis,** II, died in Newton Center, Mass., on January 18, 1966. . . . **Barry C. Eastham,** VI, died in Miami, Fla., on April 26, 1966. He was with '05 for a couple of years, but had always been interested in class matters and had attended one or two reunions in the early days. He retired several years ago and lived with his daughter in Tampa. Had three granddaughters. . . . I have received several obituary notices of the death of **Frederick V. Johansson** of Leominster, Mass., on June 28, 1966. He had been on my "Inactive List" ever since I took over and he is listed in the 1903, 1904 and 1906 Techniques. He did not graduate, although four newspaper clippings say that he did. I find this a characteristic of obituaries. Johansson was a mineralogist and a member of the National Assn. of Watch and Clock Collectors.

Mrs. Harold F. Tompson, VIII, died at her home in Seekonk, Mass., on August 11, 1966, after a long illness. She was the only co-ed I can remember as being interested in class activities after graduation. She attended two or three reunions and at our 50th, as I remember it, was accompanied by her husband, who was also celebrating his 50th at what is now the Univ. of Mass. . . . In connection with obituaries I had asked **Herman Eisele,** XIII, of Cleveland to help me in regard to the death of Edward C. Smith (which he did). I learned that Herman's wife had died in April of this year after a long

illness. She, apparently, was a remarkable woman, had been National President of the American Turners. She left one daughter. Incidentally Herman adds that although he has restricted his professional activity somewhat he still maintains his engineering office in the Engineers Building in downtown Cleveland, specializing in machinery and equipment for the production of steel containers.—**Fred W. Goldthwait,** Secretary, Center Sandwich, N.H.; **Gilbert S. Tower,** Assistant Secretary, Cohasset, Mass.

'06

Are you all back home by now, after a satisfactory summer sojourn somewhere? Whether or not you did get away for a while, Marion and I hope that you did relax and enjoy those warmer weeks—some were really hot in New England—and maybe enjoyed the always beautiful autumn foliage recently.

Like most November Class Notes, these should begin with a report on reunion and Alumni Day. Of the 12 reunions scheduled for June 11 and 12, our 60th headed the list and 1961 ended it. Right here I should compliment the Alumni Office staff, from Don down to the youngest typist—likewise all the committees of which there were eight or more, for their excellent planning and program, and the numerous bulletins and booklets detailing all events. Being the 50th anniversary of that epochal move from the "Tech on Boylston Street," across the Charles to the Cambridge campus, the center spread of the AD program was headed "50 Years in Cambridge" and showed 11 pictures reminiscent of that move. The July Review has a long story about it too. The reunion letter that was sent to all living members of '06 resulted in the receipt of about 30 ballots for class officers, a number of messages and letters, the attendance at the Charter House of 15 classmates and 7 wives: Burpees, Chases, Fletchers, Foggs, Foleys, Roses and Rowes; Bill Abbott, Stew Coey, Mike Gibbons and his grandson; George Guernsey and his daughter Mary (Mrs. C. C. Lockrart); Andy Kerr, Guy Ruggles and his sister Helen; and Allyn Taylor. Joe Santry was with us Sunday afternoon and evening, and Walter Davol and the Hoefers joined us on Alumni Day. Mike's niece (Mrs. Ryan) and her husband, also the Foley's daughter Kay (Mrs. Cusack) and her husband, were with us each day and attended most of the events too.

A few checked in on Saturday, but we were all aboard by early Sunday afternoon, greeting and meeting and chatting. Then Sherm got permission for us to use one of the conference rooms where we all gathered about a large table to chat, and I circulated an album of photos I had taken during our undergraduate days, while Sherm was setting up his screen and projector. Last December Frances **Fuller** had sent me the collection of slides that **Floid** had taken at our 50th ending her note with, "I hope . . . that 1906 will have a fine reunion next June." We did, Frances, and Floid's slides, which were shown first, helped to make it so. Sherm has many slides and kept us entertained until time to move over to the new Student Center for the reception and dinner as outlined in the July notes. It has been named the Julius Stratton Center in honor of the retiring president.

Being the senior reunioning class, we were permitted to enter for dinner before the rest of the crowd and so were able to have tables together. After the dinner we had the large and comfortably furnished nearby lounge for our class meeting, with **Sherm Chase** presiding. After welcoming those present, he asked for a report on the election of class officers, and a motion was made, seconded, and carried, to close the nominations. Replying to a question from the floor the secretary reported that there was a nominating committee of three: **Allyn Taylor, George Burpee** and **Sam Ware.** The Secretary then reported that, strangely enough, all the ballots received were votes for E. Sherman Chase, President and Class Agent; **Stewart C. Coey,** Vice-president; **Edward B. Rowe,** Secretary and Treasurer, and they were declared elected, probably for an indefinite term! After a moment of silence for the classmates who have passed on since our 55th, the Secretary-treasurer gave brief reports, including some statistics about the number who have paid dues, etc. The class funds he said have been in a savings account for the past 10 years so the interest has been a sizable amount. The original class constitution calls for one dollar a year dues and on motion from the floor it was voted to so continue, with a vote of thanks for the treasurer. Two awards were made: to **Guy Ruggles,** from the greatest distance, and to **Andy Kerr,** who is the oldest member of the class. A heavy bronze ash tray or paperweight, with the seal of the Institute in the center, has been sent to them. President Chase then spoke at some length about a proposed '06 Memorial Fund and after some questions and discussion it was voted to authorize the class officers to get pertinent information about such funds and to start one for the class. You will all be pleased to know that a sizable amount has been found to be already available for our Memorial Fund and President Chase has been responsible for the progress made to date. The class meeting then adjourned and we made our several ways back to Charter House, ending an afternoon and evening of enjoyment and accomplishment. During the day and evening **Joe Santry**'s big car, with Richard at the wheel, had made many trips from and to Charter House, and the Ryans and Cusacks also helped with transportation.

Monday, Alumni Day, dawned damp and dismal. Numerous events were scheduled for that morning—seminars, exhibits and a memorial in the Chapel. However I believe that most of us had a late breakfast and talked until time to go for the luncheon, which was held in Rockwell Cage because of the mist and drizzle. Our '06 tables were grouped together near the front and close to the wide center aisle so that we had a close view of all the doings, which were reported in more or less detail in the July Review, likewise the "social hour" in the armory and the evening banquet in the Cage. Another night at Charter House for some of us and after breakfast on Tuesday our 60th reunion became a pleasant memory.

Last spring a mailing from the Alumni Office contained a return card for "News for your Class Secretary" and as a result I received a brief message from **Anthony Mathesius,** who like the rest of us does not like creeping inflation, also from **Bob Pinkham,** who went from Tech to get a degree from Brown in 1908 and then another from Andover Newton Theological School in 1911. He was pastor of a Baptist church in Gardner, Maine, for some years, then by or before 1920 founded the Pinkham Press in Boston, which has kept him busy ever since. . . . Last April I received a letter from one of the British friends Sherm Chase has made during his many visits to attend meetings about water supply and purification, sanitation, etc. As a result our Class President received a cablegram from London during reunion: "Cordial Greetings from Institution of Water Engineers to our Honorary Member stop Congratulations Presidency of 1906 Alumni," and similar ones from Beatrice and Henry (Cronin) and "All good wishes to both." Another one from "Townsend" carried the same congratulations and ended, "May you have happy memories of riot." He had told them about the Tech Riot at one of their meetings.

During our stay at Boothbay Harbor last July Marion and I enjoyed one of the popular boat rides around the bay and islands, and made a stop-over at Squirrel Island to visit with our Vice-president and Betty in the cottage they have occupied for so many summers, right on the shore looking out to sea. In August the **Coey** family staged a wedding on the island when the daughter, Clare Virginia, of Mr. and Mrs. Stewart Clark Coey, Jr., of Wellesley was married in the chapel to John Stuart Newbury, followed by a reception at the Newbury cottage. . . . Incidentally, the M.I.T. gals are going places. Dean Emily Wick, '51, Jim's daughter, on May 13 was the speaker at a meeting of the Providence M.I.T. Club, but the report didn't say whether she talked as Dean about women students or about nutrition, flavor, etc. as a professor in that department. Likewise at the council meeting in May who should be sitting near me at dinner but four coeds, one of the class of '69 I believe.

Recently I learned, "The 1966 recipient of the Award of Merit presented each year by the American Institute of Consulting Engineers (AICE) to an outstanding figure in engineering or science will be **George W. Burpee,** a civil engineer." George was president of AICE in '34-'35 and is the second member only of AICE to receive its Award of Merit. He had retired in '63, after 40 years as a partner in Coverdale and Colpitts, then continued as a consultant. During those many years George participated in a variety of management studies for leading industrial companies: N.Y. Transit Authority, the "1960 California Water Plan", etc.,

but he also found time to be President of the Bronxville PTA, the Board of Education and the Community Welfare Fund, and was a "leader in many other activities." In 1939 George had received an honorary Sc.D. from Bowdoin where he had earned an A.B. degree before coming to M.I.T. He had been president of a large industrial company and is a director in several. He and Katherine left our reunion a day early so he could attend a directors meeting of a large steel company. Congratulations, George, on that Award of Merit.

The many messages and letters that came from classmates who regretted that they could not attend the reunion are very much appreciated and I hope in time to answer all of them: **Otto Blackwell; George Shingler; Henry Mears; John Wrinkle** (who thoughtfully enclosed a color photo of himself and his wife Mary, and they look "fit as a fiddle"); **Jim Wick** (whose "gas runs out by 12:30"); **Jim Orme** (who expected to sail for England in May with a new wife); **Art Sherman** (who had definitely planned to attend but his kind of "limitations" prevented); **Bob Cushman** (at home after a sojourn of more than six months in hospitals); and **Charley Kasson,** who is back in Plaistow, N.H.

Burton Kendall, VIII, died on March 31 but I didn't know of it till late in May. His career and their travels were reported in February 1960 notes. . . . **Paul Mack**'s death on January 6 and his career were included in the June notes and I later received a note from Mrs. Mack enclosing an obituary, which gave me some additional information. Paul was a member of the Masonic Lodge in Manila, where they lived a number of years, and of the American Society of Civil Engineers. He served with the rank of Captain in the Army Corp of Engineers in WWI. They had lived in Mamaroneck for nearly 30 years and besides his wife, Rachel Moore, survivors are two sisters and a brother. They had no children.— **Edward B. Rowe,** Secretary-Treasurer, 11 Cushing Road, Wellesley Hills, Mass. 02181

'07

Alumni Day, June 13, 1966, was a real disappointment to the Class officers. Our President, **Don Robbins** and Mrs. Robbins and your Secretary and Mrs. Walker were the only two '07 members that registered. **Louis A. Freedman** attended but, as he had not registered, there was a mix-up in seating at the evening banquet. I had sent out 20 special notices to all the '07 members within 50 miles of Boston and had expected a good attendance.

In the first paragraph of my July notes, I gave an account of the activities of Rear Admiral **Alexander H. VanKeuren** who was registered for a short time with 1907. He had replied to my 85th birthday letter to him. It is with regret that I now report his death on July 3, 1966, at his home in Bethesda, Md. The following information from the obituary notice in the New York Times is in addition to what I had in my file. Admiral VanKeuren served 43 years in the Navy, most of them in Washington. He retired in 1946. He helped to develop the atomic bomb, for which he received the Legion of Merit. The citation accompanying the medal said in part, "As a result of his vision and his perseverance in the face of many obstacles, Rear Adm. VanKeuren was largely responsible for the significant part played by the laboratory in the development of the atomic bomb." While he was at the laboratory, researchers developed a method of separation of uranium 235 from uranium 238.

Another one of the "greats" in the architectural world has passed on to his last reward. It is **Andrew N. Rebori** of 1907 who died on May 31, 1966, at his home at 6 E. Scott St., Chicago. From the large number of obituary notices I received, our classmate was an outstanding figure in the old "Chicago School" of architecture. He had little patience with the modern style of buildings which he termed "steel and glass upside down cakes." Andrew, as a boy in New York City, chopped wood, ran errands, and set type to earn money for an education. He finished evening high school when he was 18. For three years before his graduation he had worked in an architect's office making blueprints. At the suggestion of this architect, he came to "Boston Tech" on a scholarship. In 1909 he went to Chicago as professor of architecture at the Armour Institute, now part of the Illinois Institute of Technology after a year of graduate study in Rome. He designed Loyola University Library, the Loyola Della Strada chapel, the Streets of Paris at the 1933-34 Century of Progress exposition and many theaters, apartment buildings, and offices. He also designed the memorial over the burial place of Col. Robert R. McCormick, editor and publisher of the Chicago Tribune. Andrew was named to the American Institute of Architects in 1922 and chosen a fellow in 1955. His wife died in 1916. He is survived by a daughter, six grandchildren, and a brother, Louis, in New York. Your Secretary has so far been unable, even through family friends, to contact the daughter. All letters have been returned to me marked, "Address unknown."

In June I received a fine, interesting letter from James Pastoriza, '48, which gave some further information about his father, **Hugh G. Pastoriza,** whose death was recorded in the July '07 Notes in the Review. This letter will be preserved in our Book of Archives on the pages assigned to Hugh.

A note from the M.I.T. Alumni Register the middle of July told of the death of **Frederick Bachman,** Course XIII, Naval Architecture, on May 13, 1966. I wrote to Mrs. Bachman and received a very gracious informative letter from her. For the past 10 years Fred has not been well. He had three coronaries and two strokes, yet was able to go out and be about. After leaving Tech, he attended and was graduated from the George Washington School of Law in Washington with a master's degree in Law and Patent Law. Later, he became a member of the bar in the District of Columbia, New Jersey, and New York. He served as an examiner in the U.S. Patent Office and then joined Thomas Edison's staff in West Orange in 1911. During the seven years he worked with the inventor, he handled legal problems in the development and promotion of the phonograph, motion pictures, business recording machines, and nickel-iron storage batteries. In 1918 he became associated with the firm of Kenyon and Kenyon in Newark, N.J., became a member in 1921, and continued to 1959. After this he served as a counselor. For this firm, he practiced before federal courts in New Jersey, New York, and eight other states. In 1957 he received the 50-year certificate of the American Patent Law Association. Fred served as an elder in the First Presbyterian Church of South Orange and was a member of a large number of law associations. He leaves his wife, Mrs. Florence Herr Bachman, a married daughter in Edina, Minn., and three grandchildren. The following paragraph from the House Organ of Kenyon and Kenyon states: "Most of all he was a wise and patient and meticulously careful lawyer and adviser, with a depth of understanding, good judgment and good humor, unhurried yet always ready, always constructive, always sound, always reliable. He has shown us the way of quiet force and wisdom. We can all do better by following his example."

On May 20 I received word from the Alumni Association of the death of **James P. Stow, Jr.,** Course II, on February 8, 1966. My letter of sympathy to Mrs. Stow brought me the following information. For 28 years he was employed as chief engineer and chemist by the Municipal Authority, Kensington, Pa., retiring in 1956. He then moved his family to Niantic, Conn. Mrs. Stow became a teacher in the New London High School and Jim carried on a hobby of collecting and analyzing water wells over a wide area and comparing the results thus obtained. Fred has a son now living in Westfield, Mass., a daughter in Waterford and three grandchildren. Burial was in Union Cemetery, Niantic.

Again, the middle of July, the Alumni Association sent me word of the death of **Chester M. Butler,** V, last January 13, 1966. It is difficult to write a letter and express the sympathy of the Class after six months have elapsed. I did write, however, and received a very understanding letter from Mrs. Butler, together with information about Chet's work since leaving M.I.T. The first two years of undergraduate study were made possible by his working a part time job as a chemist's helper in a soap factory. His final two years, he worked as an analytical chemist. After leaving M.I.T. in 1907, he became assistant chemist at the Glens Falls Portland Cement Company, Glens Falls, N.Y. In 1915 he accepted a position as a laboratory technician in the gun cotton plant of the DuPont Powder Company in Hopewell, Va., but remained here less than a year and went to the Alsen Portland Cement Company in Alsen, N.Y., as chief chemist in 1916. Chet next joined the Marquette Cement Manufacturing Company, Oglesby, Ill., in August 1918.

One of his first assignments was to determine the advantages of intsalling a system to heat boilers with waste heat from the kilns. Upon his recommendation, these boilers were duly installed and enough steam produced to operate the entire plant. When other plants were purchased by Marquette, Chet was given the title of chemical engineer with responsibility for the quality of product at all plants. When plants in California began to produce a new type of cement which cured slowly and with much less cracking, he went to California to learn the process. A week after his return, Marquette was producing this Type II cement. During World War II, the demand for cement almost disappeared; but the Marquette cement producing machinery was converted to the manufacture of defluorinated phosphate, a substitute for bone meal in cattle and poultry feeds; other equipment was converted to produce soluble sodium aluminate, a water softener for use in locomotives. Chest assumed control of the chemical qualities for the new products. In 1946 he taught a summer course on the "Technology of Cement and Concrete" at the Graduate School of Engineering at Harvard. Chet retired from Marquette in 1949 only to begin another career, this time with the Bureau of Customs, U.S. Treasury Department, a post he held until April 1965 when he retired on his 83rd birthday. The original Butler home in Avon, Mass., is to become a museum in memory of the Butler family, which dates back and is related to Daniel Webster and Major General Benjamin Butler.

The name of **Frederick W. Barrows,** III, has been carried in the Class file as a non-associate member. I have only a home address of 3 Fairfield St. Lowell, Mass. A notice from the Alumni Register records his death in September 1944, 22 years ago. Can any class member send me further information? . . . A change of address for **Howard Marvin,** II, should be noted on your roster of living members of 1907. He apparently has moved back to Sandy Hook, Conn., at 45 Sherman St. Zip Code, 06482.—**Philip B. Walker,** Secretary and Treasurer, 18 Summit Street, Whitinsville, Mass.; **Gardner S. Gould,** Assistant Secretary, 409 Highland Street, Newtonville, Mass.

'08

We celebrated our 58th reunion June 10-14, the first three days at the Melrose Inn, Harwichport, Mass., on the Cape and the last day at Cambridge for Alumni Day. The following were present at some or all of the doings: Bunny Ames, Bill Booth, Jimmie Burch, Nick Carter, Leo Loeb, Harry Lord, Miles Sampson, Henry Sewell and Mrs. Sewell, Frank Towle, and Joe Wattles. On Saturday evening while at the Cape, we had the pleasure of a visit by Mr. and Mrs. Franklin Wilde of Hyannis. Mrs. Wilde is Bunny Ames' daughter-in-law.

We are sorry to report the deaths of the following classmates: **Carl J. Bloede** of Catonsville, Md., on June 30; **Arthur L. Gardner** of Oakland Park, Fla., on April 1; Lt. Comdr. **Harold Wellington** of New London, Conn., on April 18; **Walter Caldwell** of Louisville, Ky., on August 11; **George E. Freethy** of Watertown, Mass., on June 7; **Maurice E. Allen** of Los Angeles, Calif., on April 6; Professor **Russell T. Hyde** of Sewickley, Pa., on June 19; **Mortimer P. Burroughs** of Palm Beach, Fla., date unknown.

At the May 19 meeting of the Metropolitan Section of the American Society of Mechanical Engineers **Joseph Pope** received the A.S.M.E. gold pin for his 50th year of membership in the Society and **Leo Loeb** received a certificate for 55 years of membership.—**H. Leston Carter,** Secretary, 14 Roslyn Road, Waban, Mass. 02168; **Joseph W. Wattles,** Treasurer, 26 Bullard Rd., Weston, Mass.

'09

There were 13 of us present at the luncheon on Alumni Day, June 13: John and Margaret Davis, Chet and Muriel Dawes, Tom Desmond, Ed Howe, Joe Parker, Ben and Barbara Pepper, Art Shaw, Laurence Shaw, Henry Spencer, and George Wallis. We particularly missed Betty Shaw, who was unable to attend. So far as we can remember, she has never missed an Alumni Day or a class reunion until this year and we all wish her a rapid recovery. Alice Desmond was obliged to remain in a Boston hotel, and Marcia Wallis was not up to coming. **Gardiner Perry** wrote: "Regret my inability to be with you on Alumni Day. I am still keeping busy as President of the Perry Normal School, Boston, as you will see by consulting 'Education Directory, Higher Education, of the U. S. Office of Education'." Molly advised us that he and Jeanne had suddenly decided to take a little vacation in London, Copenhagen, Vienna, and Paris. Because of the iclement weather, the luncheon was held in the Rockwell Cage. During the business meeting the classes of '16, '26, and '41 presented their gifts which are described on page 24 of the July Review. Most of our class was unable to attend the dinner in the "Cage," but we had the pleasure of the company of Art Shaw's son Bob, '42, who is now specializing in surgery and rehabilitation on leave from the Massachusetts General Hospital and the Harvard Medical School.

The feature of the luncheon was the arrival among gun salutes and bugles of the Bucentoro, a version of the barge of the Venetian Doges which carried the Institute archives across the river 50 years ago. (See the July Review, pages 44 and 50.) The evening entertainment was given by the Glen Miller orchestra in Kresge Auditorium.

George and Marcia **Wallis** spent the winter at their Florida residence at Pompano Beach and planned to be in their cottage at Lake Winnepesaukee during July and at home in Wenham the remainder of the summer. . . . **John** and Margaret **Davis** and **Ben** and Barbara **Pepper** planned to spend the summer at their summer residences (which are almost adjacent) at Crow Point, Hingham, Mass. . . . Although retired for some time from Jackson and Moreland, **Joe Parker** is devoting almost full time to Cleverdon, Varney, and Pike, Construction Engineers in Boston. . . . This year a memorial service was held in the M.I.T. Chapel on Monday morning for those alumni deceased during the year and a pamphlet has been issued which includes the program and the alumni by classes. Those listed in our class were Charles J. Belden, Thomas G. Chapman, Howard W. Congdon, Laurence R. Forrest, Cora B. Gross, Robert M. Keeney, Arthur B. Morrill, Raymond B. Temple, Albert E. Thornley, Robert Weinstock, Edward E. Wells.

We have reported in earlier Reviews that in the fall of nearly every year the Alumni Association sponsors an Alumni Officers' Conference to which the Alumni and Class Officers devote two days to learning of the current activities and future plans of the Institute from officers, faculty members, and Alumni Officers. Our class was represented by **Art Shaw** and your Secretary. There were many outstanding features of the Conference. One was the dedication of the new boathouse (considered to be the best in the country) by Dr. Killian, Chairman of the Corporation, and President Johnson. Another was President Johnson's talk at the Friday evening dinner in which he told of the many plans that were contemplated for the future development of the Institute. A most fitting climax to the Conference was the inspiring talk at the Saturday luncheon by Mrs. Karl T. Compton, who was appropriately named the "Queen Mother of the Institute." Her talk is made available to all Alumni by publication in this issue of the Review. Incidentally, Friday, September 9, of the Conference was Art Shaw's 79th birthday and Saturday was Betty's birthday. The following reached their 80th birthdays: **Laurence Shaw,** on July 12th; **George Wallis,** on July 20th; and **Harold Paine,** on July 28th. The class extends to all of them its heartiest congratulations.

In the July Review we told of the death of **Howard Congdon** and the fact that we had written to his widow, Ruth, expressing our sympathy. She has replied with a most comprehensive and appreciative letter in which she states: "My family and I wish to thank you for your very kind letter of condolence from the Class of 1909 and your own personal sympathy. Howard enjoyed his association with the class members and various reunions and Alumni Days so very much. John and I have enjoyed attending them and meeting his classmates and their wives. I have appreciated John Davis' interest and concern and telephone calls so very much. We shall have many fond memories to cherish."

We have received from the Alumni Office notices of the following deaths. **Cora B.** (Mrs.) **Gross,** on January 24, 1965, at Quincy, Mass., where according to our records she had lived since 1919. . . . **Robert Weinstock,** II, September 1, 1965, at Menlo Park, Calif. Our records show that since 1909 he has lived in California,

the last several years at Palo Alto and Menlo Park. . . . **Homer C. Bender,** I, February 6, at Spokane, Wash. Our records show that since 1920 he has resided at Spokane. . . . **Henry H. Marshall,** II, June 19, at Orleans, Mass. Henry prepared for the Institute at Bridgewater High School, was a member of the M. E. Society and performed his thesis with Bob Inglee. We recall having seen him at some of our earlier reunions. He resided since 1939 in Syracuse, N. Y., Falls Village, Conn., and Orleans, Mass. . . . **Earl M. Smith,** III, July 7, at Jackson, Calif. Our records show that since 1938 he lived in Jackson, Calif.—**Chester L. Dawes,** Secretary, Pierce Hall, Harvard University, Cambridge, Mass. 02138; **George E. Wallis,** Assistant Secretary, Wenham, Mass.

'10

During the summer I received notices of the death of three classmates. **Harold Perry**'s widow informed M.I.T. of his death on November 24, 1965, in Carlisle, Pa. . . . In June of this year I received the following note from **George Maglott**'s daughter Joan. "While reading Tech News last night I was reminded that you may not know of my father's death on June 5 so I am enclosing a newspaper clipping from a North Attleboro paper date June 6, 1966. George Maglott, 82, husband of Lucille H. (Miller) Maglott, died yesterday at his home. Mr. Maglott was born in Ada, Ohio, and had been a resident the past nine years. He was a graduate of Ohio Northeastern University and Massachusetts Institute of Technology. He was employed at Brown and Sharpe Manufacturing Company for many years, and for the past 15 years was a civil engineer for Harwood Engineering Company, Walpole."

Both **Carroll Benton** and **Larry Hemmenway** wrote to me regarding the death of **Henry Schleicher.** The following is from the Elizabeth, N.J., Daily Journal of June 1, 1966. "Henry M. Schleicher, 83, of 408 Chilton St., a retired metallurgical engineer, died yesterday afternoon in Alexian Brothers Hospital. Born in Boston, he lived here 35 years. He was a graduate of M.I.T. and author of several books on copper metallurgy. He retired in 1954 after 32 years with the American Metal Climax Company, New York City. Mr. Schleicher was a 50-year member of the American Institute of Mining, Metallurgical and Petroleum Engineers and a member of the American Society for Metals."

Carroll wrote as follows: "Enclosed is a newspaper clipping regarding Henry Schleicher's passing which I received from Mrs. Schleicher the other day. I had written her a note of sympathy at the time of Henry's death. Larry Hemmenway called me and told me he had a clipping from the N. Y. Times which he was going to send to you. Mrs. Schleicher said she had tried a number of times to get in touch with me but I have been out of the city much of the time since the end of May." Larry Hemmenway wrote to me as follows: "This news article on Henry Schleicher was in the N. Y. Times on June 2. I did not see any formal death notice. About six months ago he had a very severe heart attack, and had been down stairs only two or three months. I have phoned him a couple of times and mentally he was very discouraged. Also had lots of trouble even walking. Previous to the attack he looked good and was very regular at our 1910 monthly luncheons."

I received the following note from **Joseph Maxfield**'s wife in May. "My husband wants me to thank you for the report of the Reunion and the photograph of those who attended. He is just out of the hospital after his third hospital session in a year, so we are slow in answering letters. He has been hampered with blindness since his final retirement in 1959, and we have been living quietly here in Escondido, Calif. Briefly, in 1947 he retired from the Bell Tel. Laboratories after 31 years there. From 1948 to 1953 he was Superintending Scientist at the Navy Electronics Lab in San Diego. After three years retirement in New Mexico he returned to the Navy as a consultant at the Pacific Missile Range at Pt. Mugu, Calif. He received an award for Meritorious Civilian Service from the Army for service during the war when he was in charge of a group at Duke University working under O.S.R.D. He received a similar award from the Navy for his work at N.E.L."

Allen Curtis dropped into the office to see me in May but unfortunately I was out at the time. . . . The following members attended Alumni Day this year and we had a delightful time: Leroy E. Briggs and wife, Robert F. Burnett and wife, Herbert S. Cleverdon and wife, Arthur H. Curtis, Ralph W. Horne and wife, George P. Lunt, Murray H. Mellish and wife, and Charles W. Wallour and his wife. . . . **Charles Wallour, Hal Manson** and myself have recently remarried. Mrs. Cleverdon and myself were dinner guests of Hal Manson and his wife recently at the Braeburn Country Club. . . . I received the following note from **Joseph Northrop.** "Still doing business at the old stand, 3940 Main St., Houston, Texas. If any of the old 1910 fellows get down this way be sure and drop by and see us." —**Herbert S. Cleverdon,** Secretary, 120 Tremont St., Boston, Mass.

'11

As each of you has received a copy of "Thelevener" containing **Jim Duffy**'s fine account of all that went on at our 55-Year Reunion, I'll say no more about it other than to publicly thank **Morris Omansky** for putting on the show. . . . Last May, **Jim Campbell** moved the place of business of Eadie, Freund and Campbell to 257 Park Ave., New York, N. Y. 10010. . . . Too late for the July notes, I received the following: **"Mark Curtis Kinney,** Course IV, 1911, after working on the Woolworth Building in City Hall Park in New York and the Wisconsin State Capitol in Madison, joined the Royal Flying Corps in 1917. After serving in France with the RFC and RAF, he returned to his home town of Mount Vernon, Ohio, and joined the family department store (The R. S. Ringwalt Company) in 1919. He is now chairman of the board and treasurer. His son, Mark Kinney, Yale 1950, is president of the company and mayor of Mount Vernon, which has recently been named 'Town of 1965' by Look Magazine." Along with this information came a picture, clipped from the Mount Vernon News of May 11, 1966, of Curtis talking with astronaut Col. Frank Bowman. Kinney flew a Sopwith Camel plane in combat during W.W.1. . . . **Ernest Batty** has accepted a full time position as resident architect for the McLean Hospital in Belmont. He is keeping the home he built last year in Dennis for week ends. . . . Sallie Denison sent me a notice of the marriage on August 13 in Spencer, Mass., of her grandson, Lincoln Denison Barton to Sandra Young. . . .

Charles A. Linehan of Belmont died June 21. A native of Cambridge and a veteran of World War I, he had lived in Belmont since 1938. He retired in 1957 after teaching at Rindge Technical High School for 44 years, during 38 years of which he was headmaster's assistant in charge of the mathematics department. For much of this time he was football coach at Rindge and a football scout for Harvard. He was a past president of the Charitable Irish Society, a member of the Gridiron Club, the Coaches Club and the M.I.T. Faculty Club. He leaves his wife, Marion and a daughter, Mrs. John H. Kramer. . . . **Ralph A. Holbrook** passed away on April 22 in Ridgewood, Conn., where he had lived for many years. He leaves a daughter Barbara (Mrs. William Phillips, Jr.), three grandchildren and one greatgrandchild. As a boy he lived in Dorchester and graduated from Mechanic Arts High School with me, but I had lost track of him for many years. . . . Word came through the Alumni office that **Royal M. Barton** died in Washington November 16, 1965. . . . A picture in the May 14 issue of the Framingham Telegram shows **F. Harold Daniels** on the steps of Stoddard Hall, a dormitory at Worcester Academy, at the time of its dedication. Daniels is chairman of the Trustees of the Academy. . . . I am sorry to report two other deaths, **Arthur Rooney** of Youngstown, Ohio, on April 4 and **Kingsley Dennett** of Honolulu, Hawaii, on April 16. . . . A letter from **Allston Cushing** tells of his work over the past year bringing the Cushing Genealogy up to date. He has been able to add 250 names together with their children to the genealogy. . . . **Carl Ell,** who retired a couple of years ago as president of Northeastern University, is still active with the University, being particularly interested in raising funds. . . . President Williams received a letter from Lois Stevens and I had one from Sallie Denison, both expressing deep appreciation for the telegrams sent them from the Reunion last June. Write to Obie.—**Oberlin S. Clark,** 50 Leonard Rd., North Weymouth, Mass. 02191

'12

The following attended Alumni Day in June: Fred H. Busby, Charles H. Carpenter, William L. Collins, Albion R. Davis, Dr. and Mrs. J. C. Hunsaker, Mr. and Mrs. Walter W. Lang, Mr. and Mrs. Wallace J. Murray, Mr. and Mrs. Frederick J. Shepard, Jr. . . . A note from **Paul M. Tyler** who is now living at 2637 Eye Street, N.W. Washington, D.C., states that he has retired from consulting practice and was recently elected to the Legion of Honor of the A.I.M.E. He is booked for the Scandinavian Cruise on the R.M.S. Caronia. This is the same ship on which he and Mrs. Tyler made the around-the-world trip in 1964. Last year they visited the Mediterranean countries as well as Switzerland, Austria and Russia. This was followed by a fourth trip to England before returning to the States. . . . **Jim Cook** is almost entirely recovered from his very severe accident of last Christmas and is now back at his apartment in Marblehead. I see him now and then. . . . **Jay** and Priscilla **Pratt** are to visit him this week on their way back to Chicago from Bar Harbor. Unfortunately I am to be away and will miss them. . . . **Harold Mitchell** writes that he is busy as President of the Buffalo Society of Natural Sciences. This includes the administration of all Buffalo Museum of Natural Sciences, which is a full time job.—**Frederick J. Shepard, Jr.** Secretary, 31 Chestnut Street, Boston, Mass., 01945; **John Noyes,** Assistant Secretary, 3326 Shorecrest Drive, Dallas, Texas 10145

'13

This is the start of a new Technology Review Year. Your Secretary was rather lax in preparing the Class Notes and missed several month's issues last year. He promises to improve this coming year. Again, he is back in retirement after 10 months of very strenuous effort as the Assistant Executive Director with Canton Urban Renewal Authority. The Citizens of Canton rejected the Authority's recommendations, which they will certainly regret. More and more of our old friends and classmates are retiring. We wonder how many are still active in business. The latest one that has come to our attention is **Max Waterman,** 75, retired as a vice-president of the Singer Company in 1960 after 47 years of service. He joined the Company in 1913, following his graduation from Massachusetts Institute of Technology. He was elected a vice-president in 1949 and from 1954 until his retirement was in charge of research and development. He has been a director of the Singer Company since 1949. He is a trustee of the People's Savings Bank of Bridgeport, Conn., and a director of the Bridgeport Hospital. What keeps you busy now, Max?

Ed Hurst is being challenged for stating as reported in the May issue of the Review, that he was the oldest living member of the Class of 1913. **E. Gordon Taylor** writes: "This note is to advise Eddie Hurst he is not the oldest member of Class '13, as I was born Feb. 8, 1887. In my old age retirement, I am farming 0.5 acre of papayas. If any of the class members come to Ft. Myers, Fla., I hope they will stop and see me. Regards to all." Yes, Gordon, you appear to be the oldest. Keep going. Write often.

Once again, we have to be the bearers of sad news, but from notice from the Alumni Office and especially through the kindness of **Tom Lough,** we must announce the death of another dear classmate, **Max H. Harrington,** who died May 12, 1966. Tom writes and we quote, "Enclosed is a notice of the death of our classmate Max Harrington. He was a fine man. We were roommates during our first year at M.I.T., both having come from Fargo, N.D. He was with the Detroit Edison Company for 33 years before his retirement in 1955. He is survived by his wife, Ruth, three children and five grandchildren. While I have my pen in hand and have the strength to wield same, may I suggest that future class reunions be held at a more accessible place than Oyster Harbors Club, since few members will be able or willing to operate an automobile at that time. When Genervive and I attended the 50th Reunion we were dependent upon the kindness of the **Charlie Browns** and the **Jack Farwells** to drive us from Boston to Oyster Harbors Club and return. So Ed Hurst was born in March 1888, I was born in June 1889, so I am breathing down Ed's neck for the honor(?) of being the oldest member of our class. Best wishes, Phil." Thanks Tom for your very much appreciated letter. To Max's family we extend the heartfelt sympathy of the Class of 1913. We have already made arrangements with the management of Oyster Harbors Club to hold our 55th Reunion there and we shall share the facilities with the Class of 1923, Ex-president Stratton's 45th Reunion. What say you other '13ers. Maybe we might all go from Boston in June 1968, by bus.

Alumni Day, Monday June 13, 1966, was a very noteworthy event commemorating the Institute's entry into Cambridge 50 years ago. The Class of 1913 was represented by the Capens, the Gliddens, Burton Cushing, Eugene MacDonald, Walter Muther and his charming daughter, Charlotte Sage, Philip Terry, Charles Thompson, and Allan Waite. Both the luncheon and the dinner were held in the Rockwell Cage and the Happy Hour in the old Armory. All of the events will be fully described in the main part of The Review together with illustrations. The Class of 1916, with its pageant and its contributions to the Alumni Fund and pledges, was tremendous. 1913 salutes 1916 for its outstanding accomplishments. All present were saddened with the farewell to our beloved President Julius Stratton. We shall miss him. We have had the pleasure of meeting our new President Howard W. Johnson on several occasions and we pledge our cooperation and support to him of the Class of 1913. The Concert at Kresge was very enjoyable conducted by the Glenn Miller Orchestra. The Alumni Day programs are all very pleasant and enlightening for keeping abreast with the high standards pursued by our alma mater and to renew old friendships and to make new acquaintainships with members of other classes.

Of course, we must pay tribute to Henry B. Kane, '24, the Director of the Alumni Fund since its inception. Chick retired as of July 1, 1966. Another good friend of 1913 and its officers. We hope that you all have received **Gene MacDonald's** letter and enclosures regarding making your will and designating M.I.T. as one the beneficiaries of your wealth. **Newt Eichorn** took advantage of the form from the Review office as follows, "Sorry, I couldn't make Alumni Day to see who was there, but know Phil Capen will have a full report in the next Tech Review. Best wishes to all." Thanks, "Ike." . . . Again, we must thank **Charlie Thompson** and the Alumni Office for notifying us that our good friend, and classmate, **Howard P. Fessenden** passed away April 19, 1966. "Fuzzy" was a very loyal 1913er for many years, but during the last decade seemed to have lost interest. If anyone has more details or information of Howard's career, we shall be very anxious to include the facts in later issues. . . . We have received only the bare fact from the Alumni Office that **Edward A. Hubbard** departed from this world on March 20, 1966. The Class of 1913 offers most heartfelt condolences to Edward's family. . . . About November 20 we received a letter and notice from **Ralph Thomas** advising us of **Clarence Berry's** death November 12, 1965. Several months later we were notified that Ralph Thomas had passed on November 1965. He previously notified us that his wife had died, and it would be appreciated if some good friends would send in further details about Ralph.

We are especially proud of our Alumni Office who forwarded to your Secretary a copy of a Memorial Service for M.I.T. Alumni in the M.I.T. Chapel, Monday, June 13, 1966, at 11:15 a.m. and a note as follows, "We thought you would be interested in the enclosed note and program which is being sent to the next of kin of those Alumni listed as deceased, for whom we have addresses. Sincerely yours, (Signed) D. F. Severance." The enclosed note to the next of kin; "On Monday, June 13, 1966, a Memorial Service was held at M.I.T. for those Alumni who were deceased this past year. We thought you would appreciate a copy of the program and the knowledge that your loved one lives on in the hearts of his fellow Alumni. Cordially yours, (Signed) D. P. Severance". . . . What a trip the Capens had in early July. We drove to East Aurora, N.Y., where we spent the 4th of July weekend made famous by Elbert Hubbard. One of our nephews was married there on July 1. We continued down the road, stopping and visiting Gettysburg and its historical surroundings (Ike was out, so didn't advise what was new in politics in Massachusetts). Continuing the march, we travelled through these picturesque hills and roads of Pennsylvania to Pittsburgh, where we visited our youngest married daughter and family. The travellers then took up the trail to

Elkton, Md., and the following day finally located that wonderful couple named **Bonney.** An overnight visit was enjoyed with Gene and Bob. They sold their 160-acre farm on the shore of the Elk River, and disposed of all of their live-stock as well as most of their other staples. They are both in general good health with a few old age disabilities but still cheerful and entertaining as ever. About October 15, according to their married daughter in Newton, they will depart from Maryland and domicile in Palo Alto, Calif., and on.

"Downunder" awarded us with a most interesting and welcome letter from Brig. **L. H. Lemaire,** OBE. ED. P.O. Box 851, Townsville, Queensland, Australia. Yes, old Lammy and we quote, "The glorious Fourth is today, so what better day to drop you these inadequate lines to remind you that I have not forgotten the kindness extended to me by you and your charming lady, about three years ago. I always read your notes and was very amused by Eddie Hirst's claim that he was the oldest member of the Class. He beats me by six months. I think I was born on 21 January '89; but at least have the satisfaction of realising that only the young die good. I noted your various activities and regret that I will be unable to have a viva voce recital in 1968; is it not the next reunion of the class? I also, am pretty busy, as to keep myself mentally in trim. I have switched to humanities, and am having a most interesting time attending lectures in education, psychology, and Australian history, at Townville University College. Last year I did French, English and European History, to 1815. My fellow classmates, at least 55 years my junior, suffer me graciously, and I am thoroughly enjoying myself. My three children are now, or shortly will be, Masters in their respective professions. My daughter, whom you may remember was with me at Oyster Bay, got her third degree in Master of Aerodynamics. The younger son is a Master of Agricultural Science, and the elder son has a Bachelor of Arts and Law degree. He should have his Masters Degree this year. Probably a brilliant Mother! I never see any reference to **Goeff Rollason** in the notes and I do hope all marches well with him and his. My regards to all the gang and if anyone comes out to this frontier of the Empire, please remind them of my existence, as I could do with some M.I.T. tonic as Ward Eight (Haywood Brand). The best to you and Roz. Yours ever, Lammie." Yes, Lammie, we may catch on to a cattle ship some day and fool you.

We were very happy to notice that the Gustin Family is still making the headlines. The Sunday Boston Herald September 4 featured the marriage of Miss Judith-Lynn Hartwig of Southboro to Lester Carlisle Gustin 3rd. How we wish Lester could have been there to witness the ceremony of his grandson entering into the realm of holy matrimony. The Class of 1913 congratulates both the Lester C. Gustin, Juniors as well as the Lester Gustin, Thirds.

Our gal, **Marion Rice Hart** has done it again. About September 8, 1965, she flew solo in her small plane to Bermuda. Now, on July 15-16 she flew solo to England via Iceland from Presque Isle, Maine (about 11 hours to Iceland and 4½ hours to Glasgow, Scotland.) We quote from the Boston Traveller: "A 74-year-old Washington, D.C., woman apparently became the oldest person to fly the Atlantic solo . . . Mrs. Marion Hurt didn't even tell her family she was going until she was more than half-way there . . . The flying septuagenarian said this was the longest solo hop she had ever made, although she had been at the controls on three other transatlantic flights with friends." We are indebted to **Arthur Hirst** for the clipping from the Boston Traveller. Thanks Art also for your note and we quote in part, "What a courageous and thrilling life Marion has led since 1913. Our class must be proud of her. How about suggesting that she invite '13 members, at least those of X and V, to tour the world with her? Sincerely, Art." We agree. Marion, why don't you write us the story of your life? The Review would probably make a feature story from your tales.

Your Secretary considers himself very fortunate to have been a guest of the M.I.T. Alumni Association from 5 p.m. Thursday, September 8, through Saturday, September 10, 1966. **Ellis Brewster** was also a guest and our association with Bill is always a pleasure. The format of the Seventh Alumni Officers Conference was based more on student and alumni relationship than on scientific or engineering trends. The emphasis was more on scholarship and loans to the more intellectual or top grade secondary school graduate or even the high scholastic star athlete. The dedication of the Harold Whitworth Pierce Boathouse was one of the outstanding events of the Conference. Now M.I.T. is equipped with the most up-to-date rowing facilities in the world. So, boys and girls count your blessings and one of them is to be an Alumnus or Alumna of the Massachusetts Institute of Technology.—**George Philip Capen,** Secretary and Treasurer, 60 Everett Street, Canton, Mass.

'14

Alumni Day June 13 saw a goodly number of Fourteeners and their wives present: Hugh and Lois Chatfield, Leicester and Alma Hamilton, Arthur Petts and guest, Levi Duff and daughter Nan, Harold and Florence Richmond, Ray Dinsmore, Linwood and Florence Faunce, Francis Atwood and Mrs. Harold Wilkins, Walter Leathers and guest, Herman and Dorothy Affel. We were privileged to see and hear retiring Preident Stratton. The day was featured by the inauguration of what will probably be carried on in the future, a chapel service memorializing those of the Alumni who have passed away during the past year. There were 12 Fourteeners in this group.

Included was the death on May 19, 1966 of **Harry M. Wylde** who lived on Flagg Rd., Southboro, Mass. Harry was a Course X man and much of his professional life was spent with the Lever Brothers in Cambridge. He leaves a wife, Lillian, and a daughter, to whom the class expresses its sincere sympathy. . . . **Clarence L. Smith** passed away in July, 1966, in Florida, where he retired. After a brief connection with the Niagara Falls Electric Service Corporation he joined the Kerite Insulated Wire and Cable Company in Seymour, Conn., where he was director of purchases and materials until his retirement and move to Florida. He leaves a wife, Louise, to whom the class expresses its deep sympathy. Her address is 510 Boca Ciega Isle, St. Petersburg, Fla. 33706. . . . **Max I. Omansky** died on August 31, 1966. Max was one of the few of our class who was really a Bostonian, and he spent most of his life in the Boston area. After a few years with the Public Service Commission in New York City he returned to become a construction engineer with a construction organization in East Boston. Our records show that in 1934 he also engaged in the practice of law, with an office on Tremont Street. Our records also indicate his marriage in 1917. He had one daughter. The class sincerest sympathies go to the survivors.

There are a number of address changes: **Albert J. Hoyt,** 2914 Torrington Rd., Shaker Heights, Ohio 44122; **Robert C. Wiseman,** Court Road, Bedford, N. Y. 10506; (Prof.) **Walter C. Eberhard,** Room 3-441, M.I.T., Cambridge, Mass. 02139. This latter is an illustration of what happens to many members of the Staff of M.I.T. after they are officially retired; they just keep on going, helping the Institute. **Leicester Hamilton** is also in this category. Other new addresses are Dr. **Werner T. Schaurte,** 414 Lanvensburg—Neuss, Germany; **Ralph C. Goeth,** P.O. Box 2003, Austin, Texas 78767; **Ernest W. Mann,** 111 Wadsworth Rd., RFD 1, Duxbury, Mass. 02332; **William L. McPherrin,** 147-G, West Hillsdale Blvd., San Mateo, Calif. 94403. . . . No Review notes would be complete without spotting the most recent location of that persistent peregrinating painter, **Alden Waitt,** whose card, dated August 24, 1966, and mailed from Cascais, Portugal, reads. "After nearly six weeks over here my granddaughter and I are ready to get back home. We had an interesting but hot and uncomfortable 18 days in Athens and the Greek Islands and have had a month here in Portugal when we leave this weekend. We have had a good summer. Best wishes to you and yours." Alden.

Harold and Florence **Richmond** returned in good health late in August from a two-month Mediterranean cruise. In September Harold slipped, and in catching himself sustained fractures in both arms and dislocated a shoulder. He spent a short time in the hospital. . . . We hope to see **Charlie** and Mrs. **Fiske** before they leave Maine for Florida late in October.—**Herman A. Affel,** Secretary, Rome, Maine. Mail: RFD 2, Oakland, Maine 04936

'15

Hello everybody! Here beginneth the first column of the new season with the hope you and your families have all enjoyed a pleasant and happy summer. Our

congratulations to the fine 1916 Class for the great job they did on their Fiftieth Reunion and their recordbreaking contribution to M.I.T. It was a pleasure to work with Harold Dodge and Len Stone on their Committee. Many thanks to them for the copy of their Reunion Directory—an attractive and excellent job. Attending Alumni Day activities at M.I.T. on June 13 were Larry Bailey, Jack Dalton, Vik Enesbuske, Henry and Mrs. Leeb, Hank and Mrs. Marion, Archie Morrison, Wally Pike with his wife and daughter, Marion, Bill Smith, Fred Waters and guest, Eastie Weaver, Pop Wood and guest, Max Woythaler with his wife and guest, Henry and Frances Daley, and Ray and Mrs. DeLano.

These with enough others to total 60, attended our annual Class Cocktail Party that afternoon at the Faculty Club. It was wonderful to see **Hank** and Virginia **Marion** again, as Hank has made such a strong and remarkable recovery from his serious surgery. About half this crowd were taken in a class bus to the Algonquin Club for a delightful dinner. Then on for cordials to **Bill Smith**'s lovely 19th deck apartment in downtown Boston with a spectacular view of the city and surrounding suburbs. Now, where else could or would you find such a happy and friendly group of classmates—truly "1915 the Class Supreme." Again, voluntarily and generously Al underwrote the deficit at The Algonquin, beyond our nominal charge for the dinner. Many Thanks, Al. Read how that inimitable, indomitable, imaginative, irresponsible, indefatagable Al describes the day (as only he could): "Belay the kedge anchor and drop the gang-plank," thundered Admiral Bill Smith from the poop deck of the good ship "Snifter" as, with billowing top gallant scuppers awash and 'a bone in her teeth,' she skimmed across the storm-tossed waters of the noble Charles to dock at the Faculty Club Marina for the 1915 Annual Cocktail Party. Then, with a 'hard-a-lee,' **Pirate Rooney** dropped the gang-plank and led a horde of some 65 1915'ers, chanting in raucous and off-key voices unusual ditties of the sea that would have arched the eyebrows of Technology's Founding Fathers. These seasoned veterans in true buccaneer formation swarmed over the ramparts of the Faculty Club, where Bounteous Barbara and her 'Bunny' girls had in readiness mountains of Salt Horse, Lobscouse, and Plum Duff, with foaming tankards of cheer from the cane fields of the Caribbean and Sam Berke's 'Old Mr. Boston' warehouse. A mellowing glow soon dispelled the mists of the years and sparked memories to return to the days when peg-topped corduroys—that squeaked when dry and reeked when wet—and one's initials on the pewter-topped steins at Charlie Wirth's were the epitome of the 'bon vivant' of Copley Square. All too soon the landlubber class bus arrived to tour the mates through Cambridge to the Algonquin Tepee. Then on to Admiral Bill's spacious quarters at Emerson Place where luxury defies all definition. Truly our eminent Course I bridgebuilder has created here a testimonial to his profession—a virtual bridgeway to the stars. There the deep azure of the night, with its galaxy of twinkling stars in the misty baldric of the skies, miraculously creates the thrill of the astronaut as the lights of Cambridge and environs weave an ever-changing kaleidoscopic pattern of vivid hue and magical complexity. Here we were privileged to feast our eyes on Bill's heirloom silver, choice china and porcelains of the Ming era, and sooth our palates with exotic oriental ambrosias served in gem-crusted goblets of the Caesars, until the midnight chimes peeled their message—"All's Well With 1915, The Class Supreme.' Then, with a final peek at the moon-kissed silver ribbon of the Charles, winding its diminishing way to a mere thread in oblivion, we returned to the chaotic mundane world of a tomorrow, there to await another year for the return of the good ship 'Snifter' laden to its gunwales with good cheer, good fellowship, and auld acquaintance from Memory Bay."

For the 1967 Alumni Day Cocktail Party Al and Barbara have a big surprise that we know will attract even more classmates and their guests to this memorable celebration. To avoid the bad weather of January, **Larry Landers** and **Bur Swain** are planning the New York Class dinner in April 1967. Make your plans now to be there. Notices later, of course. . . . Fran and I were unable, regrettably, to make our annual trip to the mountains to visit **Doug** and Elizabeth **Baker, Boots** and Helen **Malone, Phil** and Helen **Alger, Speed** and Molly **Swift,** and **Pop** and Charlotte **Wood.** We missed, also, **Wayne Bradley**'s generous invitation to stay at his Moosilaukee Inn, Warren, N.H. Better luck, next year. However, many visits with classmates and their families in and around Boston maintained pleasant contacts with these fine old friends.

Now, news from good old classmates—widely scattered. **Al Sampson** sent **Phil Alger** some newspaper clips on Horatio Alger, the inspiring author of our boyhood and Phil answered, "Thanks ever so much for your nice letter. Yes, Horatio was a first cousin of my grandfather, and had been a family legend these many years. All the money he made from his books he used to put boys through school. A friend, Ralph Gardner, who is the foremost collector of Alger books (he lives in New York City) has written a biography of Horatio that is most interesting. I would have liked to be at our 51st, but I had to be in Montauk, Long Island, as the NYSSPE gave me a citation in June as the Engineer of the Year for N.Y. state—a dubious honor but fun to receive. Anyway, at our age the friction in the joints is much greater than of yore, so I don't make journeys for pleasure any more. I talked over the phone the other day with **Doug Baker** in Middlebury, Vt. He is well and active in local affairs. We both hope to attend the 55th. I see that **Kingsbury,** '15, (whom I don't remember) is now associated with the American Unitarian Association at 25 Beacon St. in Boston. I hope to see him the next time I get to the Hub."

In June the executive director of the Metal Powder Industries Federation in New York wrote to **Larry Bailey,** "It gives me great pleasure to inform you that the Board of Governors of the Metal Powder Industries Federation accepted unanimously the recommendation of the Awards Committee naming you as the recipient of an MPIF Powder Metallurgy Pioneer Award. A citation and plaque in recognition of this honor will be presented to you at the Federation's Fall Management Meeting, Hotel Hershey, Hershey, Pa., October 3, 1966. I do hope you will be able to be present." Congratulations to Larry for this richly deserved recognition of the important and valuable contributions he made to that industry. . . . **Henry Daley:** "We enjoyed every minute of our Alumni Day visit, climaxed by our Class Cocktail Party and the Algonquin Club dinner. Frances and I look forward to this annual visit to meet old classmates and their young looking wives." How do you like that Blarney flavored last line? . . . Both **Alan Dana** and his wife Edna have been in the hospital for surgery. All the best to them both for quick and complete recoveries. . . . **Ray DeLano,** Duxbury, Mass., wrote to Al: "Thanks to you, my wife and I enjoyed the Class Cocktail Party and festivities very much. Owing to the rain and poor visibility it was rather a rough trip home, but we made it." We were glad to welcome Ray and Mrs. DeLano back into the fold and we do hope they will be regular attendants at future Class meetings. "An American Story" by Bessie Kaufman is her biography of her brother, **Mitchell B. Kaufman,** X. Mitch was lost in November, 1930, in a tragic hunting accident in the northern Maine woods. Up to that time he had been popular, active and generous in all Class and Alumni activities. . . . **Larry Landers,** the permanent Secretary of the Boston English High School Class of 1911, ran their 55th Reunion in June in Boston. From all reports he did the same great job that he does on our annual Class Dinner in New York City.

In a long letter in April from Samarai on the eastern tip of New Guinea, **Ernie Loveland** describes his vivid, colorful and dangerous travels in and out of those strange islands made famous in the Second World War, away down under in Micronesia. He seems able to exist eating canned meat and fish and fresh fruits washed down with tea (helped along with massive doses of penicillin) and sleeping on floor boards and straw mats. Fiji, to him, is a booming metropolis. But, even he doubts that it all deserves the storybook title of "A Tropical Paradise." In June a card from Sydney said he was back in civilization. Then a long letter telling more of his wanderings and privations among those far away islands, including the loss of his passport and vaccination certificate somewhere around Guadalcanal. In the Pidjin language of those God-forsaken places "Him got plenty trouble" Ugh! . . . **Boots Malone** suggests we have the winter Class dinner in the South so he could conveniently run over from Sarasota where Helen and he stay. Ah, me! In planning to come up to the Class Cocktail Party, **Hank Marion** wrote, "Virginia and I are looking forward to the pleasure of seeing Barbara

and all the gang." And we were all delighted to see them and find Hank looking and feeling so well.

Bill Mellema, La Canada, Calif., wrote "My 50th will have to be my last Reunion. Have a gay time and remember me and all classmates." . . . From Ithaca, N.Y., **Harold Pickering** wrote and true to his word, while he was here he visited his old Course I pal, **Wally Pike** and phoned me. Glad to hear from you, Pick. Keep busy and healthy: "Just about a year ago we had that grand 50th reunion and I am just getting out of orbit with my feet back on earth. I must add my compliments to the committee members for the splendid way in which they handled all the details. I would have written sooner, but this winter I have been doing a lot of procrastinating, and I might add that I haven't finished yet. But that note in the class notes several months ago made me realize that I had been too quiet about my activities. For 30 years I have been selling and servicing domestic heating plants. Among the brands handled are Oil-O-Matic oil burners; hydrotherm boilers; Hastings gas burners; and Thermopride furnaces. And five years ago I married for the second time. I took on a wife with 19 furnished apartments. Together we have 26 apartments which we rent furnished and maintain. It keeps me busy, considering how much I have slowed down. We have some tenant changes this time of the year as students graduate, and we have to arrange new leases and redecorate. Our tenants have come from Germany, Japan, Indonesia, Saudi Arabia, Iraq, Chile, Venezuela and Switzerland. So we let them travel to us instead of going to them. We miss seeing their country but we do enjoy the personal touch. Last year at the reunion my wife had her leg in a cast but now she is up and raring to go. Such as next week we hope to go to Cambridge and I promise (or threaten) to call you if nothing comes up to spoil our plans."

From Los Angeles, **Ray Stringfield** sent a newspaper clip showing a picture of **Bill Mellema** as one of the four survivors of the original 12 founders of Structural Engineers Association of Southern California. Bill was honored at a testimonial dinner in June. Founded in 1929, the Association now has more than 900 members. Ray also wrote, **"Bob Welles** surely does a lot for the M.I.T. Club of Southern California. He is again hosting a buffet supper in his lovely garden on July 9 for the Freshmen entering M.I.T. and current students home for the summer, as well as Governors of the Club. I am stuck with four weeks jury duty and have just moved my plant that makes couplings for sewer pipe, to larger quarters in Gardena, Calif., as business expanded and crowded us out of our old quarters in Culver City. My other plant in Fullerton makes rubber gaskets." Thank you, Ray, for that nice letter. Certainly Bob Welles deserves a lot of praise and appreciation for his generous and hospitable interest in those young M.I.T. men. Bob himself wrote that he'd go to the Annual Class Cocktail party, if we'd hold it out there in that lovely country, for a change. Well, Bob, we wish we could do that for you, but we appreciate your plug for L.A.

In the June issue of The Appalachian Mountain Club magazine Appalachia, is an excellent picture of smiling **Pop Wood,** Chairman of the Club's Membership Committee, presenting a special certificate to the Club's 10,000th member. Pop, you "should be in pictures." . . . It's sad to report these deaths: **Donald Belcher,** May 29; **Jacob Ginsburg,** August 11, 1965; **Ralph P. Joslyn,** May 13; **Takang Kao,** June 16; **Elmer H. Neuman,** March 3; **Charles P. Washburn,** April 13. Ta-Kang's son, Robert, wrote, "For more than 30 years my father was Far Eastern Representative of Armco Steel Corporation in Shanghai, China. He retired and returned to this country in 1956. Last year he attended his 50th Class Reunion at Cambridge, Mass., and was very proud of the fact. My father is survived by my mother, Mrs. Ta-kang Kao, 218, 28th St., San Francisco, Calif.; three sons, Robert of Milwaukee, Wis., Donald and Victor of Los Angeles, Calif., and daughter Ruth (Mrs. C. S. Ling) of Pottsville, Pa." The sympathy of our Class goes out to the families of these deceased classmates. Remember any personal news or notes you send in will be welcomed by our reading public and will "help Azel."—**Azel W. Mack,** Secretary, 100 Memorial Dr., Cambridge, Mass. 02142

'16

We open our column with a word from our good President, **Ralph Fletcher:** "Five months ago we enjoyed one of the finest 50th reunions a class could have. Much has been or will be written or said about this wonderful experience. I'd like to use these few lines to express my gratitude and that of the Class to **Steve Brophy,** our Reunion Chairman, and his committee for the tremendous program that they prepared for us. The industry, imaginaiton and inspiration of this dedicated group enabled us to achieve a major success in terms of attendance, pleasure and impact. Similarly, we are indebted to our 'money men,' **Joe Barker** and **Bill Barrett,** to the cooperation of many others, and to all those who contributed so generously, for their efforts in accumulating the record-breaking gift which our Class turned over to the Institute at the Alumni Day luncheon. I'm sure I speak for everyone who was present when I say, 'How glad I am that I was there to be a part of such a colorful, exciting, warm, friendly and completely enjoyable 50th Reunion.' We surely showed one and all that 1916 is undoubtedly not only the last but the best Class that ever graduated from the Tech on Boylston Street."

And so the 50th has come and gone! Under the masterful direction of Steve Brophy, Reunion Chairman, and his Reunion Committee, with pageantry planned by Ralph Fletcher, and with the assistance of Alumni Association personnel, the program included: living quarters in McCormick Hall; bright cardinal blazers on the backs of all '16ers; Ralph's cocktail party and dinner Thursday evening in McCormick Hall; academic procession and on stage in cap and gown at Commencement; Commencement luncheon in the Great Court with Van Bush as speaker; chartered buses Friday afternoon to Cape Cod; two days at the Oyster Harbors Club with golf, shore dinner, meeting first-reunion wives as well as others, talking, napping, speed boat runs, small plane rides, historical-spot visits, Reunion banquet, post banquet entertainment, water-front New England clambake, buses back to Cambridge Sunday, President and Mrs. Stratton's garden party, Memorial service on Monday in the Tech chapel, the Alumni luncheon and the presentation of the Class of 1916's 50-year gift of 3.1 million, Alumni cocktail party and banquet, entertainment in the auditorium, and then back home on Tuesday after another McCormick breakfast—a grand total attendance of 196, a new record for a 50th class.

All successes stem from hard work, and much credit for the success of our 50th goes to Steve Brophy and his remarkable Reunion Committee. Steve served outstandingly in all phases of planning and detailing with an assist from your Class Secretary; Ralph Fletcher served in that unlovely position of Reunion Treasurer but with Sibyl created the widely-hailed Bucentoro pageant at the 50-year gift presentation; and **Joe Barker** performed brilliantly in that job of jobs of building up the largest gift on record. Five Regional Chairmen, **Jim Evans, Ralph Fletcher, Cy Guething, Vert Young,** and **Irv McDaniel,** covered the country and over the border, telling their constituents what a wonderful party they should not be missing. **Len Best** with his Geographic Register and **Peb Stone** with his Reunion Booklet provided well-organized packets of current and long-term class information. **Izzy Richmond,** assisted by **Bob O'Brien,** handled transportation with those fine arrangements for buses to speed to and from the Cape. The smooth running of the many gatherings was a tribute to the quiet work of **Stew Rowlett** and his Reception and Registration Committee, of **Henry Shepard** and **Hy Ullian** and their respecitve Host Committees in Cambridge and Osterville, and of the Mary Barker/Sibyl Fletcher/Jessie Brophy Women's Committee. **Barney Gordon** and his committee took care of souvenirs; **Irv McDaniel** and **Jim Evans** kept the risibilities bubbling in the entertainment following the banquet; and **Walt Binger** presented a huge collection of biographies. And the skillful hand of our Honorary Member and Reunion Secretary, Bob O'Brien, aided by Donn Byrne, Ralph's secretary, was everywhere in evidence in the many administrative details of the many gatherings and meetings in Cambridge and Osterville.

Here is a list of those in attendance: George Anderson, Tom Atchison, the Phil Bakers, the Joe Barkers, the Bill Barretts, the Len Bests, the Walt Bingers, the Wesley Blanks, Berthoud Boulton, the Steve Brophys, the Ray Browns, Willard Brown, Frank Bucknam, Jack

Burbank, the Bob Burnaps, Van Bush, George Camp, the Clint Carpenters, the Jap Carrs, Charlie Cellarius and guest, Freeman Clarkson, the Howard Claussens, Dina Coleman, the Dan Comiskeys, the Joel Connollys, the Bob Crosbys, the Tom Colberts, the Charles Crosiers, George Crowell, the Theron Curtises, the Kem Deans, the Elbridge Devines, the Harold Dodges, the Lewis Dows, Bill Drummey, the Paul Duffs, the Bert Ellises, the Jim Evanses, the John Fairfields, the Dick Fellowses, Talbot Flanders, Mrs. W. H. Fleming, the Ralph Fletchers, Hovey Freeman, the Jeff Gfroerers and son Arthur, Allen Giles, the Barney Gordons and his sister, the John Gores, the Harold Grays, the Ed Grausteins, Rudi Gruber, the Cy Guethings, George Hale, Freeman Hatch, Paul Hatch, the Saul Hoffmans, Maury Holland, the Frank Holmeses, Dick Hunneman, the Ed Jenkinses and his sister, the Ted Jewetts, the Lee Joneses, the Stewart Keiths, the Emory Kemps and son Class Baby Malcolm, the Benjamin Kersteins, the Dick Knowlands, Charlie Lawrance and son Richard, the Bill Leaches, the Al Lovenbergs, the Gene Lucases, the George Mavericks, the Mac McCarthys, Jim McClure, the Irv McDaniels, the Tom McSweeneys, the Herb Mendelsons, the Elsa Muesers, Shatswell Ober, the Dave Pattens and son Peter, the Earle Pearsons, the Allen Pettees, the Charlie Reeds, the Ed Parsonses, the Jeremiah Reens, the Izzy Richmonds, Ken Richmond, the John Robertsons, the Stew Rowletts, Eric Schabacker, the Henry Shepards, the David Shohets, Art Shuey, the Harry Smiths, the Blythe Stasons and son William and wife, the Francis Sterns, the Peb Stones, Ted Strieby, the Ken Sullys, the Norm Thompsons, Earl Townsend, the Hy Ullians, the George Waymouths, the Nat Warshaws and son Stanley and wife, Mrs. P. C. Webber and guest, Mrs. R. E. Wilson, the Duke Wellingtons, the Arthur Wellses, the Will Wyldes, and the Vertrees Youngs. The total was 196 with 106 classmates and 76 wives. It is of interest to note that the Class picture of the 25th Reunion (stag) in 1941 at the Oyster Harbors Club showed 106 classmates!

In preparing the reunion items below, we have had the willing assistance of the following: Willard Brown, Jap Carr, Jim Evans, Maury Holland, Ruth and Emory Kemp, Stew Rowlett, Peb Stone, and Will Wylde. Here are some general items: Steve Brophy's phrasing of what the Reunion was all about, "to celebrate 50 years of being alive, grateful to God, our wives, and M.I.T., for health, happiness, and prosperity—in that order!" the made-to-measure red blazers with M.I.T. seal and 1916 label (the cost mostly underwritten by a worthy group of generous classmates), a bright mark of distinction and a conversation piece in hotel elevators, on campus, and on streets everywhere; **Willard Brown** wearing the "1916 Official Photographer" badge made by Irv McDaniel and dodging around to get good shots at every turn; the willing helpfulness of Azel Mack, Secretary of the Class of 1915 and chairman of 1915's 50th Reunion, in supplying us with experience data on planning a 50th; Peb Stone's souvenir Reunion Booklet, with his statistics on ALL '16ers since Time One, and his notes of appreciation to Azel Mack '15 for aid on statistics and to Chick Kane, '24, for his contribution of all those little uniquely-Chick-Kane illustrations in the booklet; the gift from C. A. Clarke, Secretary '21, a leather-covered copy of the actual 1916 Class Day Program; seeing our favorite author again, none other than Sylvia Young, from whose first and second "Young Safari Letters" (our title) we have often quoted; the total feeling of friendliness throughout the whole four days, such as a philosopher might say should be expected when the days of competition are over; our own bright smiling co-ed, **Elsa Mueser** and husband Ed, Columbia '15, and how appropriate her stay in McCormick Hall; the thrill of talking with classmates, not seen for 50 years; and, best of all, how lucky we all were to be alive for this event!

PHOTO: GORDON S. BROWN, '31

Mrs. Ralph A. Fletcher, wife of '16's class president, christens the Bucentoro while Joseph Barker shields himself from the suds during the class reunion in Osterville.

And items for Commencement Day: the "school days" atmosphere in the robing room for Commencement exercises; the tremendous thrill one had when he entered Rockwell Cage as a member of the academic procession; the paternal pride, smile, and individual handshake of President Stratton for each of his protégés going into battle armed with M.I.T.'s technological weapons; Van Bush, in fine form in red blazer, speaking for the 50th Class of 1916; Steve Brophy laying the wreath at the Maclaurin plaque in the main building lobby, with Mrs. Karl Compton in attendance, and also, in memory of Welles Bosworth, '89, architect of the buildings, a wreath at the cornerstone of M.I.T's main buildings, whose central group is to be named for Richard Cockburn Maclaurin.

And items for the two days at Osterville: the thoughtful inclusion of facilities to assuage a thirst at the back of the buses to and from Osterville—"I was glad to leave the driving to them!" the many new faces from all over the U.S. and Mexico brightening every corner of the Oyster Harbors Club; seeing again our Class Baby, Malcolm Kemp, son of **Emory** and Ruth **Kemp,** now a bit over 50 as anyone awake should be able to figure out; Walt Binger's most beautiful giant-sized tool-leather collection of individual biographies; the fun that was had at the dry-run and christening of the barge in the driveway at the Club, with bumped shins of some of the oarsmen; Sibyl Fletcher's deadly aim with a live bottle of champagne on the prow of the Bucentoro; **Dave Patten**'s personally conducted tour of Plymouth Foundation in Plymouth for the ladies and escorts; Izzy Richmond's personally piloted plane trips for some who had never been in a small plane nor seen the Cape from the air; **Howard Claussen**'s personally skippered fast-plowing water trips on Nantucket Sound in his good ship Schipperke; Golph (not golf) played by a certain threesome while the Class meeting was going on, and the final 11 on the ninth hole by one of the hookers; the delicious but messy clams and lobsters at the clambake on the front lawn of the Club at the water's edge Sunday noon, with lobster bibs and all.

For the 50th banquet we have: the wonderful food supplemented by the choice wine that Ralph brings to reunion banquets; the nicely-occupied highly-colorful dresses and red blazers filling the main dining room; the controlled emotions of our prexy as he addressed the bright assembly and told about "the best class" and all that; the beautiful specially-engraved 50th Reunion Fletcher-granite bookends presented by Ralph to your Class Secretary; the attractive modest-sized silver loving cups given by Steve to Reunion prize winners; the M.I.T.-seal gold buttons given by Steve to his reunion workers for their blazers; the many things supplied by **Barney Gordon**'s Souvenir Committee—pens, nylon sport shirts, seamless stockings, Arpege perfume, Best pencils, granite paper weights, M.I.T. bags, and all; the entertainment after the banquet by Irv McDaniel and Jim Evans with Irv's tape recorder and the Tech Show music, delightfully nostalgic; Barney Gordon with his rendering

of Old Man River and many wonderful old time melodies; song lyrics authored and handed out by Irv, and the crowd singing to the tunes of "Shine On, Harvest Moon" for Ralph, "Oh Johnny, Oh Johnny" for Joe Barker, "Casey Jones" for Harold Dodge, "Row, Row, Row" for the wives, and "Oh Mr. Gallagher, Oh Mr. Sheehan" for Howard Claussen.

And back in Cambridge: the President's garden party at the President's house, the first for a 50-year Class; the privilege of meeting our President and the delightful charm of the President's lady ("She's a doll!"); the challenging sculpture in the garden; the amazement of some '16ers at the collection of modern art hangings, and the suggestion of one that we sometime make a gift of one large old-fashioned Winslow Homer.

And these items for Alumni Day: the Memorial Service (prepared by Reverend **Edward Weissbach,** '16, just before his death on April 24) for Alumni deceased during the past year, held in the M.I.T. Chapel Alumni Day, June 13, at 11:15 a.m.—widely reported as a beautiful service; the morning rehearsal of the pageant for the Alumni luncheon, with the cannon shot proven in at the open doorway to assure no blowing-out of windows in the Cage; the dignity of our two representatives at the head table for the luncheon, Ralph Fletcher and Steve Brophy; Ralph, holding back the familiar Niagara Falls with masterful aplomb, and his almost audible sigh as he resumed his seat, "I made it!" What he said: "Thank you Mr. Groves. It is a great privilege for me on this occasion to speak for the Class of 1916, the last and best from Boston Tech, the greatest class that ever graduated from the Tech on Boylston Street. Fifty years ago, the Class of 1916 spearheaded the festivities and helped move the treasures of the Institute from Boston to Cambridge upon a royal barge, the Bucentoro. The chairman of all of our five-year reunions, and especially this our 50th Reunion, was also the student chairman of the pageantry which moved M.I.T. to Cambridge in 1916, the illustrious Thomas D'Arcy Brophy, retired Chairman of the Board of Kenyon & Eckhardt, Inc., and now Chairman of the Board of the American Heritage Foundation. Today the Class returns, more than 100 classmates strong, with their ladies, from far and near, and in exemplification of their 50-year voyage, we proudly present the SPIRIT OF 1916, treasure-laden and piloted by our veteran Class Agent **William Barrett,** retired Vice-prseident of the Metropolitan Life Insurance Company, and our incomparable Class Secretary, **Harold Dodge,** Professor of Quality Control of Rutgers University, manned by six willing galley slaves of the Class of 1916, and commanded by Dr. Joseph Barker, former Dean of Engineering at Columbia University and former Chairman of the Board of Research Corporation of America, in whose honor Research Corporation of America has recently established at M.I.T. the Barker Fellowship in Engineering. Dr. Barker is the dedicated and record-breaking Special Gifts Chairman who will now present the 50-year gift of the Class of 1916 to Dr. Killian." Then: the cannon shot starting off the parade giving the audience a sharp shock announcement that something important was about to happen; the Bucentoro parade headed by two 10-year-old heralds, Sam Fletcher (son of Ralph and Sibyl) and pal Jonathan Davis, then the 1916-banner bearers Bill Barrett and Harold Dodge, and the barge with gift-bearer Joe Barker, oarsmen Peb Stone, Cy Guething, Dick Hunneman, George Hale, Art Shuey, and Saul Hoffman, and barge-pushers Jim Evans and Bob O'Brien; the hush as Joe raised the Golden Fleece in the bow of the barge; Joe's momentary difficulty in adjusting his helmet to accommodate his trifocals as he made the presentation; the multi-throated gasp as the 3.1 million figure was announced; our kudos again to Joe for his marvelous work in building up the 50-year gift and to the many who made it possible; and our thanks to Sibyl Fletcher and the two boys for a flawless performance in snow white regalia. And so ends the account of the 50th Reunion! Hugh Darden, Institute Estate Secretary, noted in a letter to Steve that the events for Alumni Day were "highly memorable—in fact, I have not yet recovered from the cannon shot." And V. A. Fulmer, M.I.T. Vice-president and Secretary, wrote Steve right after Alumni Day: "While the afterglow of the Class of 1916 celebration is still with us, I want to send a 21 gun salute for your part in setting a new standard for 50-year-class reunion planning. M.I.T. is a richer and more meaningful institution because of what you and your classmates have done."

The report of the 50th, sent out in September to '16ers, was well illustrated with pictures from several '16 cameras. The great bulk of the pictures, however, came from Willard Brown, official reunion photographer, who took a total of 90 color slides. A display of colored prints will be shown at the 51st next June. . . . At the Commencement luncheon, the Emory Kemps found that the Philip Stoddards, '40, sitting next to them, had just bought a house in Hingham directly across the street from where the Kemps built in 1939, also that Phil is a cousin of one of the ushers at Ruth Anne Kemp's wedding. Says Emory: " 'Tis a small world." And **Will Wylde,** writing from Stamford, Vt., has this interesting post-reunion bit: "Sunday after the Reunion, Ann and I were seated in the back yard when a car drove in the driveway and out jumped a man wearing one of the by-now famous red blazers. It was **Free Clarkson** who lives 30 miles or so further into Vermont and who was on his way home from nearby Williams College where he had attended his 52nd Reunion. He and another '16er who also had graduated from Williams in 1914 had agreed at our Reunion that they would meet there and wear their red coats. They attracted a great deal of attention and of course favorable comment. We had a good time hashing over our reunion for a couple of hours. I guess there is no telling where those red coats will turn up in years to come." . . . Speaking further of our reunion and the 16-M.I.T.-66 granite paper weights that Ralph had added to the souvenirs (one for each Mr. and each Mrs.), **Bert Ellis** has found that by mounting the two in suitable pieces of walnut, the result is a wonderful pair of bookends. Bert hasn't said whether he has a pattern which he'd be glad to send to anyone. . . . In April, just two weeks before he passed on, **Ed Weissbach** wrote Jim Evans that he had just visited **Harold Moxon** in Winchester in reference to possible attendance at the 50th, and had a nice visit with Rachel and Harold. Ed also wrote: "I was down in New Jersey in January for the consecration of my friend (and old rector) as suffragan bishop of New Jeresy at Trenton. In fact, I was one of his two attending presbyters in the service. Elizabeth remarked that that was like being the bridesmaid at a wedding, and how right she was."

Allen Pettee writes from Tryon, N.C., that **Gene Barney** and his wife, Peg, paid them a good visit last spring "and help us watch the famous Tryon Steeplechase." He also says that he himself was a glutton of a sort reunion-wise this year for "after four grand M.I.T. days I whipped myself up into another similar round—my 55th at Yale, grand too, of course." . . . Early in May **Ralph Davies** reported a visit to see **Spotts McDowell** who, as Ralph says, has had a "rough time" but is making progress. Spotts has been reading some of Sylvia Young's Second Safari Letters that we have in our library, and he quite enthusiastically agrees with other '16ers that she writes "beautifully." Ralph himself was hospitalized shortly after this visit, and we regret that he and Mrs. Davies were unable to attend as they had planned.

In June we had an interesting letter from Joseph N. French, '11, telling of the good work done by **Tred Hine** as staff architect at the Detroit Institute of Arts over the past five years, for additions to the museum. Mr. French writes: "The South Wing has been completed . . . and shows the results of Tred's characteristic attention to the details of architectural design. . . There is an ideal flexible arrangement for any number of electric focussed lighting for individual exhibits and excellently planned mechanical equipment rooms. Also, the arrangement of vertical clear glass panels in corners and clear glass at top of walls next to ceilings of Exhibit Rooms, giving an effect of continuous space in place of the usual enclosed areas normally seen in museums. All connecting openings between Exhibit Rooms are full height to ceiling to enhance and extend this sense of continuing space. . . Detroit has honored Tred by having his name as staff architect on the bronze plaque placed in the entrance lobby of this South addition." Congratulations, Tred!

Last minute note: At the Alumni Officers' Conference banquet on September 9, Joe Barker accepted for the Class of 1916 the Bronze Beaver Presented to the Class by the Alumni Association in recognition of our "truly magnificent 50th Reunion."

We have more items to report, on Cy Guething, Francis Stern, Jeff Gfroerer, Kem Dean, Steve Brophy, and Vertrees Young—these we will hold over until the next issue. Plan now to attend the 51st Reunion next June at the Chatham Bars Inn, in Chatham, far out on the Cape. And in the meantime, help keep this little

old column full and interesting by writing a little but writing often to any one of your Class officers.—**Harold F. Dodge,** Secretary, 96 Briarcliff Road, Mountain Lakes, N.J. 07046.

'17

We are all greatly saddened by the sudden passing of our illustrious Secretary on Saturday, September 3. Besides editing the Class Notes since 1957 he has always been most active ever since our senior year when he was president of our class and was in continual attendance at most all class functions since. Herewith is the notice appearing in the Hartford Courant: **"Winfield I. McNeill,** 75, of 1256A Farmington Ave., West Hartford, died Saturday at Hartford Hospital. He was in industrial management and financial consultant. Mr. McNeill was born in Wakefield, Mass., and was a member of the class of 1917 at M.I.T. He served in the U.S. Army during World War I as first lieutenant. For more than 30 years, McNeill was associated with Aluminum Company of America, Procter and Gamble, the Colgate-Palmolive Company and General Aniline Film Corporation. He held positions ranging from office manager to vice-president—controller, and covering every kind of executive role. Mr. McNeill was active over the years in M.I.T. Alumni affairs, serving as President of the M.I.T. Club of Northern New Jersey, treasurer of the M.I.T. Club of New York City and Honorary Secretary of M.I.T. for the Northern New Jersey territory. As an undergraduate he was secretary and president of the Class of 1917. He was a member of the New York University Club, the Financial Executives Institute of New York City, and vice-president of the National Society for the Prevention of Blindness in New York. Mr. McNeill was a member of the Farmington Country Club, treasurer of the Greater Hartford Council of Churches, and chairman of the Business Improvement Consulting Service of the Greater Hartford Chamber of Commerce. He was also a member of the Westminster Presbyterian Church of West Hartford. He organized the "Old Guard," a club for retired business and professional men of West Hartford. He leaves his wife, Mrs. Carolena Nelson McNeill; a daughter, Mrs. Ruth Knauft of West Hartford; and three grandchildren. A memorial service will be held Tuesday at 2 p.m. at the Westminster Presbyterian Church, with the Rev. Gurdon Scoville officiating. Burial will be at the convenience of the family. Taylor and Modeen, 136 South Main St., West Hartford, has charge of arrangements. There will be no calling hours. The family suggests memorial donations be made to the National Society for the Prevention of Blindness, 16 East 40th St., New York 16, N.Y."

The following notes were prepared by Win just before his death. They are a tribute to his efficiency and his excellent practice of always meeting deadlines:

Cheerio and a Hi-Ho to all 1917ers who will be celebrating their 50th year next June since graduating from M.I.T. All advices from the "grass roots" indicate a big turnout, including many whose activities have kept them from attending previous reunions. The 50th reunion will afford a grand opportunity to chat with many of your classmates whom you have not seen since graduation. Plans are under way for a happy get-together at the Chatham Bars Inn on Cape Cod before the regular Alumni Day on the M.I.T. Campus. A 50th anniversary of any kind is one that you can't afford to miss. And in the meantime bring your classmates up-to-date through the Class Notes on your activities since the 30th anniversary history was published.

Alumni Day 1966 was cold and threatening so that the luncheon and cocktail hour had to be held indoors. The following were present with their wives: Walter Beadle, Ken Bell, Ray Brooks Atwood Dunham, Stan Dunning, Bill Hunter, Stanley Lane, Al Lunn, Win McNeill, Ray Stevens. . . . Our much travelled Assistant Secretary **Dix Proctor** recommends a cruise by freighter to West Africa which he and Vi completed late last spring. He is now planning to leave this month (November) for a freighter voyage around the world, hopefully on a Holland ship out of New York. Dix reports that many of the African countries have really modernized. For instance, looking over the dock area of Lagos from Apapa, one would almost believe he was in Hoboken looking toward New York. He visited a big mining complex of Republic Steel outside Monrovia, and one by Bethlehem Steel at Buchanan. Firestone has an immense setup outside Monrovia and U.S. Rubber has just acquired some six million acres for rubber development. Pittsburgh Glass has a big setup at Sherbro. Dix, you should prepare a travelogue.

Nelson Chase, well-known Belmont (Mass.) muralist and watercolorist received newspaper publicity for his lecture before the Arts and Crafts Association on his murals of Belmont showing early homes and farms, dress and activities of 1859. Nelson moved to Belmont in 1922 and built his home on Hay Road by himself with the help of one laborer. When he was commissioned to do several murals in Washington, he built a charming studio to accommodate the size of these murals. The success of his Washington murals brought many private commissions. His murals of "Cambridge 1848" may be seen at the Harvard Trust Company in Central Square, Cambridge. He is currently offering a course in watercolor at his studio. . . . We report the deaths of three of our classmates: Major **Edwin J. Grayson** of Elsah, Ill., who died on June 18; **John M. Mertz,** who died on March 14 of this year at the Golden Acres Nursing Home in Wilmington, Del.; and **Dean H. Parker** who died on June 27 at the University Hospital Ann Arbor, Mich.

John Mertz was a student in Course VIII Physics who was at M.I.T. only a short time. We have no information of his activities. . . . Major Grayson was at M.I.T. four and a half years and received his S.B. degree in Chemical Engineering. After a varied career in the army in the Pacific in W.W.II including Guam and the Philippines he became a contract specialist for the St. Louis Ordnance District of the U.S. Army. . . . Dean Parker, who was one of the regional vice-presidents of the class died of leukemia which he had been fighting since 1964. He was 70 years of age. He retired from Allied Chemical in 1961, for whom he had been the Detroit representative for colored pigment sales service. In 1961 he was given the Man of the Year Liberty Bell Award by the Philadelphia Society for Paint Technology. In 1965 his book, Principles of Surface Coating Technology, was published. The Oil, Paint and Drug Reporter of March 1965 said: "This is the best all around book on paint technology to be published in the last 10 years." He gave a special course in surface coating technology at Wayne State University in Detroit.

L. E. Schoonmaker writes from Gainesville, Fla.: "I was retired from the Army in 1947 after nearly 30 years of service. In the fall of 1947, I joined the faculty of the University of Florida as an Assistant Professor of Electrical Engineering. I was soon promoted to Associate Professor. My chief duties were teaching and counseling students. I also was quite active in professional societies, serving for many years as Secretary-Treasurer of the Southeastern Section of the American Society for Engineering Education. I later served as President. I retired from the University in June 1966. I have no hobbies, except possibly gardening. I am currently the president of the Men's Garden Club. I also plan to continue to live in Gainesville. . . . **Al Moody** writes from Denver, Colo.: "After 13 months in Florida we are back in Denver. I was down there helping Florida Gas Company on a big construction program which has been completed. While we enjoyed Florida, we are glad to be back in Colorado. We have purchased a home and it looks as if we would remain here."

Chester Ames writes from Lynn, Mass. "Upon the termination of my military career in 1919, I entered the General Engineering Department of the N.E. Telephone Company where I remained until my retirement in 1959. During this 40-year period I held three staff positions, heading up three major divisions of telephone engineering, I.E. Equipment Engineering, Building Engineering and Plant Extension Engineering. Since my retirement, I have done considerable touring by auto throughout the U.S., Canada and Mexico, and have taken some luxury ship ocean cruises. I have a daughter and three grandchildren living in Connecticut." . . . **Ken Bell,** who has been acting as a State Department consultant on leather, for its foreign aid program, received an honorary degree of Doctor of Science from the Lowell Technological Institute. The citation for the award was based on his service as Chairman of the Executive Committee of the Lowell Technological Institute's Research Foundation of time served is heart warming." Advisory Committee for LTI's School of Leather Technology over the past 15 years. Ken says: "This gracious recognition of time served is heart warming."

The following is from **Allyne C. Litchfield:** "As for my activities in recent years, you know that I retired after 40 years with U. S. Rubber in the fall of 1958. I guess I filled about every job in the Production and Tire Divisions, and on the staff. In the fall of 1955 I went to Montevideo, Uruguay, where my wife and I spent six months. We had a job to do for a plant down there that produces about everything you can think of that uses rubber. On the way back in the Spring of 1956, we spent two weeks in Buenos Aires (we have a good sized plant there) and then to Santiago, Lima, and then by boat to New York. It was a wonderful experience, and we enjoyed every minute of it. . . . After retiring, I went into the real estate business in Grosse Pointe, joining up with one of the oldest firms in the Detroit area. It has been interesting and gives me something to do, but is not too confining. I have two daughters. The younger daughter graduated from the University of Michigan and taught school until she decided to get married. Our older daughter continued at the Univ. of Michigan to get her M.S. in music. She taught music until she, too, was married. . . . Time flies—it doesn't seem seven and one half years since I retired and, believe it or not, I don't feel any older."

Bill Dennen writes: "Ruth and I spent the winter in Mexico as usual but varied the program by driving to New Orleans and putting the car on a United Fruit Company freighter sailing to Puerto Barrios, Guatemala and stopping at Belize and Puerto Cortes, Honduras on the way. We had an enjoyable stay in Guatemala seeing old friends and M.I.T. Alumni and visiting Tikal and United Fruit Company operations. We then went to Mexico via El Tapon where we visited and remained for the Fiesta. Following that, we made a trip up the West Coast and then home in April." . . . Capt. **Noah W. Gokey** of Virginia Beach, Va., reports: "I'm still alive and kicking. If I can find any XIII'ers to go with, I may get to the reunion next year."

John Holton is another traveler. He writes: "In February, my wife and I sailed from New York on the United Fruit Company SS Metapan for Guatemala and Honduras for an 18-day freighter cruise. It was a delightful trip with excellent food. We particularly enjoyed Lake Atitlan and volcano, as well as the native market at Chichicastenango." . . . **A. E. Tuttle** writes from Dublin, N.H., "Massachusetts taxes and my health have caused me to make New Hampshire my permanent home. I work daily in my shop and enjoy friendly neighbors." . . . **Max Mackler**'s recreation has been salt water fishing. His avocation is public welfare, namely, slum clearance, crippled children, and education of underprivileged boys and girls. "I am retired but still do some industrial consulting work." . . . **Leslie Christison** of Northampton, Mass., says: "After many years in the textile industry, I am now doing part-time teaching in mathematics as a retirement project at the Mary A. Burnham School for girls in Northampton. I enjoy the teaching and still have good health."

The following additional notes were prepared by **Dix Proctor** while **Stan Dunning** and he were in Room 421 of the Baker House overlooking the Charles River. Our attendance at the Seventh Annual Alumni Conference was saddened by not having **Dean Parker** and **Win McNeill** as in the past—the former went to his reward last June. Also we were sorry not to see **Ray Brooks** and **Tom Meloy** who were listed but could not attend. However, '17 was represented by **Justin Basch, Bill Dennen, Stan Dunning, Al Lunn, Dix Proctor** and **Ray Stevens.** The report on this very successful conference will be found elsewhere in this issue and should be well worthwhile reading. . . . At this writing the Interim 49th Foliage Reunion seems likely to be well attended and so it should be as our 50th is coming in June 1967.

Friday, June 9, 1967, is Commencement Day when our Class of 1917 is gowned and will be honored guests at this ceremony. We proceed to Chatham Bars Inn, Cape Cod that afternoon. Our festivities will continue there through to Sunday afternoon when we return to Cambridge for Alumni Day. Our class will be guests of the Institute in McCormick Hall—the Waldorf-Astoria of the Campus. Already we are receiving word that many are planning to attend; here are a few comments. **Warren Tapley** says, "Hope to be with you for the 50th." **Dick Whitney** "will be aboard June '67." **Willard Newell** "will be at Chatham Bars Inn for the 50th." **Earl Lewis,** "I will attend the 50th." **Vince Panettiere** of Sarasota, Fla., told your Secretary last spring that he and his wife would attend the 50th. . . . The resumption of the regular monthly luncheon at the Chemists' Club in New York was held on September 8, after the summer recess in July and August. Attendance was extremely limited, as only **Dick Leongard** and myself sat around our usual table, although the club manager joined us. Notice of the luncheon was not sent out according to **Bill Hunter,** who phoned in advising he was unable to be present, business commitments preventing. The October luncheon will be held at Sturbridge as it coincides with our 49th Reunion. Our efficient treasurer reports that our class funds are at a low ebb. We should have at least $2000 to cover regular and unusual expenses for our 50th. Won't you all send your checks to **Lucius T. Hill,** 19 Congress St., Boston, Mass.? . . . The following changes of address have been reported: **Charles Gager,** 70 Beach Pond Rd., Groton, Conn. 06340; **W. Joseph Littlefield,** 6080 S.W. 104th St., Miami, Fla. 33156.—**C. Dix Proctor,** Secretary, P.O. Box 336, Lincoln Park, N.J. 07035; **Stanley C. Dunning,** Assistant Secretary, 1572 Massachusetts Ave., Cambridge, Mass. 02138

'18

At the very time the brethren were gathered for Alumni Day, the Reader's Digest proclaimed, "A class reunion is where you get together to see who's falling apart." The following were certainly sturdy enough to have gathered on campus last June 13: Eli Berman, Tom Brosnahan, Sam Chamberlain and wife, Sax Fletcher and wife, Clarence Fuller, Al Grossman, Julie Howe, John Kilduff, Nat Krass, Len Levine, Ed Rossman, Max Seltzer and wife, Walter Wilson and wife. That same day, with reverend footfalls for those M.I.T. men who had died during the last year, some Alumni went to the chapel for a memorial service. It was dedicated to a dozen of our own classmates and to about 500 others, beginning with one from '86, ending with two from '64. This was an addition which gave to Alumni Day a momentary glimpse of the eternal for, even beyond our uncertain day on earth, man can still receive the respect and affection of those who cared about him. . . . In his response to an Alumni Day mailing, **Clarence Hanscom,** of Bedminster, N.J., wrote, "I am still busy with my wife in the antique business. In addition, I have been recalled by the Bell Telephone Labs as a consultant, for the purpose of identifying items in the Bell System Historical collection, now numbering some 21,000 and to help supervise the inventory catalogue. This involved repairing, marking, photographing, and packaging for a move to a more permanent place before the end of the year."

From Irving McDaniel, '16, comes a letter reviving all kinds of memories: "During our 50th reunion I heard of the death of **Earl Collins.** One night, on the roof of McCormick Hall, we drank a silent toast in his memory. It is surprising how many of our class knew him, respected him, and a few of us loved him. I was one who loved him because I knew him so well through Tech Show and his superb music. It was through his compositions one was able to get an insight into his thoughts, his dreams, his objectives in life, and they were all ideal. I hope most of them came true. Please express to Mrs. Collins and their son and daughter our class condolences. I regret deeply that I was unable to continue my contacts with Earl after graduation. This is one of the faults of our economic life. But recently he wrote me and was interested in what I was trying to do for our 50th—putting on tape M.I.T. songs and Tech Shows. I used an organ (at which I understand Earl was an expert) and my tape came out fairly well. I promised him I would let him know the results. The idea was fine for small reunions, but for our 50th it was impossible. So forget that idea. Too many people, too much noise. I had figured it as background music, or for singing. It didn't pan out. I suppose you are making preliminary plans for your 50th. Of course you will not be able to equal the terrific record that 1916 made, but you may remember from a letter a few years ago that I was always partial to 1918, and I wish you the greatest success. We had the superb chairman, Steve Brophy, and I feel certain he would be only too pleased to give your chairman any advice he learned the hard way at ours." . . . Another peripheral dividend for this column came from **Al Murray** in the form of a personal letter and the carbon copy of one to **Sidney Marine.** Deleting part of what he wrote to me, he says: "I like the

bits of philosophy which originate from a man who has lived life and is able to put his observations into pictorial prose. This, from one of your admirers, who remembers you so well, when, as top-sergeant, you marched down the dusty road with us when we were an M.I.T. military company, during the Summer of 1917. Do you remember? (How could anyone forget, Al?) I am enclosing a copy of a letter to Sidney Marine so you can see that what you write does not go out into an echoless void." The letter to Sidney is a gem. Part of it gave me a tummy-twisting belly laugh. We're not falling apart yet, even though we don't get together as often as we would like. Al wrote, "The Class Notes told about your interesting activities, and reading the report, plus old memories of our sophomore days at M.I.T., prompts me to write you. To establish the scene and time for what follows, we must go back to the starting of the Naval Reserve. Do you remember that a Navy spokesman came to Tech to tell us that the Navy was planning a summer cruise for which they wanted volunteers? Well, we signed up, drilled at Boston Navy Yard and finally, sailed away on the Atlantic on one of the big (?) battleships. There were about 50 boys from Tech, a few more from Harvard. Some came from yacht-owning families, but I was just a radio operator. Classmates Parker and French were also interested in radio. As you know, there was the thrill of our first target practice at sea, shore leave at Montauck Point, and a parade at Norfolk (I believe). We all had our names stencilled on the front of our jumpers and one day when you and I were standing on the signalling bridge, our skipper, Capt. Jackson, pacing up and down, stopped in front of you. Pointing to your name he asked if Marine was your real name or were you perpetrating some sort of joke. Do you recall this? The cruise was good experience for us, but the Navy failed, apparently, in securing your or my services when the war came. I, too, was in the U.S. Air Service, teaching radio, both theory and practice (the code) to the Student Pilots, of which you must have been one if you trained at the M.I.T. School of Mil. Aero. During the pleasant and fruitful years that have intervened I have remained close to the radio (now electronic) field. In 1924 saw the development and operation of the first successful, under-water, radio-controlled torpedo for the Navy. This was followed by heading the research department in one of the largest radio companies, and later the television department of another large company in the East. World War II found me in Washington with the National Defense Res. Com. in Communications and later Guided Missiles. And here I have stayed. Since 1948 I have been a consulting Electronics engineer and now divide my time between this and Investment Management duties. Shortly after arriving in Washington I married, and we have two sons in college. They are over 6'2" tall, but with no interest in engineering! Our daughter, a young world-traveler, has completed her Freshman year at Smith. It was good to have news of you again. Teaching our youth is such an important job, that I trust those in Scarsdale who can secure your services, realize how fortunate they are to have a man of your background available. Your interest in stereo photography and works on clocks I share."

F. Alexander Magoun, '18

In the late spring we had a postcard from Switzerland in which **Max Seltzer** said, "Quite unexpectedly we are vacationing in Southern France, Switzerland and Holland. I managed to talk with **Bill Foster** by phone in Geneva. He was busy getting ready to return to Washington, so I did not see him." Later Max was generous enough to write in more detail. "Most of our time was spent in Southern France. We were amazed to see how flat much of the land between Paris and Marseilles is; farm and fruit area which is quite verdant, peaceful and bucolic, with many of the ruins of the early Roman civilization still standing. It seemed a little incongruous to pass through small country villages dominated by one or more new modern multi-story apartment houses. We enjoyed the Chateaux country in the Loire valley, with its magnificent castles dominating the scene with all the splendor at the command of the nobility of the 17th and 18th century. Along the French Riviera above Nice and Cannes we found the beautiful St. Paul de Vence, where the Naeght Foundation has recently opened a most unique museum combining indoor and outdoor works of art in a very imaginative fashion. This is a center of modern art, with museums devoted to Leger, Matisse, Chagall, Picasso, and many other distinguished painters. Rain inhibited our travels in Switzerland. Most of our six days were spent in Lucerne and Basel. When we talked to Bill Foster by phone, he promised to be at our 50th, come the Russians or high water. This is a must for all of us. Though we flew from Boston to Paris, and from Amsterdam back to Boston, all our travel in Europe was by rail except from Nice to Lucerne. We found rail travel interesting, comfortable, and educational to the extent that we could observe the countryside. We have a better idea of where Avignon or Luxembourg are than the average tourist who uses planes exclusively. Holland is an exciting country, with the bustling population conquering the sea despite King Canute's failure. We saw the tulips at their best. We visited some fine museums, the great city of Amsterdam, and The Hague. Since our return we have seen some of our gang at Alumni Day. More recently we are happy to report we had dinner with the **Al Grossmans** and later with the **Sam Chamberlains**. They leave in early September for a two month cruise to most of the ports of call in southern Europe. We waved good-bye to the **Julie Howes** in late June from Logan Airport as they departed on a four-months safari in Europe. More recently we had good cards from them in England. We have enrolled in the fourth Alumni Seminar at M.I.T. which takes place the second week-end in September, and now we have to study in preparation for this course in The Learning Process."

As for getting together or falling apart, **Sax Fletcher**'s letter regarding a 50-year reunion gift, began with an appropriate appeal: "When did you last review your own estate plans?" It was a splendidly worded and well thought out appeal. By air mail, from Australia of all places, the director of the Alumni Fund sent me a resume of the contributions by classes: 1916 totals two million and a half, 1917 has reached well over half a million, we beat both 1919 and 1920, but have given only $30,363. Let it be known, however, that we are by no means falling apart. My oldest grandson has been admitted by every college he applied to: Cornell, Princeton and Yale. As though that in itself is not flying high enough, he had an airplane pilot's license at age 17, and won the Faculty Prize at the Rivers School in Weston. This puts his name in bronze on the school library wall as the outstanding senior who best exemplified the school tradition of industry, responsibility, and loyalty.—**F. Alexander Magoun,** Secretary, Jaffrey, N.H. 03452

'19

Way back in June, eight of us attended Alumni Day. Those present were Royden Burbank, Ed Flynn, Maurice Goodridge, James Holt, Mr. and Mrs. Arthur Kenison, Mr. and Mrs. George McCreery, Mr. and Mrs. Paul D. Sheeline and your Secretary. It was a farewell to Dr. Stratton and a welcome to our new President. There was an interesting discussion of a new plan for freshmen which has been most successful. There are practically no required courses, and the results have shown higher marks and fewer drop-outs.

Doc Flynn gleaned some items for this column by writing some personal letters last spring. A letter from **F. L. Hunter** says that he is retired, living in a residential hotel in Evanston. His wife has been quite ill. . . . **Leighton Smith** was in Utah this spring photographing birds at the Bear River Migratory Wildlife Refuge with a group of 30 or 40 friends, all interested in nature photography. . . . **Ervin Kenison** now lives in Bradenton, Fla. He writes that he has taken up shuffle board and billiards, but his main interest is duplicate bridge. He is rated as an Advanced Senior Master and hoped to make "life Master" rating in July. Several men told of their recollections of the move of Tech to Cambridge and the Bucentoro crossing the Charles in 1916. **Ev Doten** says that he was working end of those big oars, and finally solved their problem by dropping the end in the water and letting the progress of the barge (finally propelled by a little putt-putt motor) carry the oar through to the end

of the stroke. **Fred Hunter** was a monk in the mob scene and **Leighton Smith** recalls vividly parading around the pebbled surface of the great court in thin felt boots.

W. Roy Mackay retired December 1, 1962, as superintendent, Rod and Wire Mills, Bethlehem Steel Corporation, Sparrows Point, Md., after 40 years of continuous service. His present address is 512 E. Washington Street, Orlando, Fla. 32801. . . . On Monday, June 13, a Memorial Service was held at M.I.T. for those Alumni who were deceased this past year. Those honored in the Class of '19 were: Roderic M. Blood, Daniel H. Brown, John E. Cassidy, Charles J. Fariest, Donald H. Lovejoy, Austin J. O'Connor, Pedro A. Piza, Maurice H. Roe, H. Stanley Weymouth. . . . Additional deaths reported are: **Harold K. Ireland,** Greenfield, Mass. November 14, 1965; **Richard Cashin,** Oak Park, Ill., April 17, 1966. . . . New addresses are: **Jesse Stam,** 16 Whites Ave., Watertown, Mass. 02172; **Robert Insley,** 400 S. Pitt St., Alexandria, Va. 22314; **Luis Aldaz,** Univ. of New Mexico, 1929 Lomas Blvd. N.E., Albuquerque, N.M. 87106.

Fifty year reunion gifts were listed recently by the Alumni Fund Director, Ken Brock. The Class of 1916 came through with a gift totaling 2½ million. To date the Class of '17 records about $650,000; Class '18, about $30,000; and our Class about $25,000. The Class '16 gift included $1,860,000 in deferred gifts. **Paul Sheeline** is chairman of our 50-year gift, and we as a class will certainly back him up in his efforts. How about lining up your gift on a long range basis, as everything given five years previous to the 50th is included.—**Eugene R. Smoley,** Secretary, 30 School Lane, Scarsdale, N. Y.

'20

It's good to be back with you after the long summer hiatus, and may it find you in the best of health and spirits. 1920 had the usual satisfactory turnout of the faithful on Alumni Day last June, including Norrie and Betty Abbott, Alan and Betty Burke, George Des Marais, Bill Dewey, Foster and Gladys Doane, Herb Federhen, Al Glassett, Witold Kosicki, Pete Lavedan, Frank Maconi, John and Kathryn Nash, Bob Patterson, Ed Ryer, Frank Badger, Al Wason, El and Mrs. Wason, and the Harold Bugbees, Perk and Mina Bugbee being in Europe at that time. . . . **Hank Caldwell** writes, "Em and I have been here on Longboat Key, Sarasota (629 Rountree Dr.), about two and a half years and we thoroughly enjoy it. Sarasota Bay is at our back yard, where I sail a small keel sloop built in Wareham, Mass., and the Gulf is just a block away for swimming."

"Dode" Spiehler writes, "I retired three years ago and we moved to 3110 Sprucewood Rd., Wilmette, Ill., last fall. We go to Ft. Lauderdale in the winter months." . . . **Dorothea Brownell Rathbone** writes, "Probably it was the long-suppressed desire (since the '90's when my grandfather did it) or the influence of the alumni news in which everyone retired seemed to be whirling around. Anyhow in June, flying east, I circled the world in 30 days—an impression of Asia, so important these days. It was a great success and I had just a lovely time—so many kinds of people, the vegetation interesting to a pseudo-landscape architect. I am happy to be back again in my good old New England which prepared me for so many places—climbing over the rocks on our beaches gave me a head start on the Acropolis. Any kind of weather had been tried before. Sorry to miss Alumni Day, where I enjoy seeing everyone." . . . **Bud Cofren** phoned in last August when he stopped for a visit with **Scotty Wells** after seeing his daughter in New Hampshire. Bud and the new Mrs. Cofren are reported well and happy, heading back to their home in Winter Haven, Fla. Bud gave me the sad news that Scotty's wife, Eleanor, had passed away in July. The hearts of your classmates go out to you, Scotty. The Cofrens planned to stop in at the Ryers in Duxbury before taking off for the South. Bud said he had word from **Buzz Burroughs** while Buzz and **Tony Anable** and Dan Harvey, '21, were cruising on Chesapeake Bay last summer.

C. T. Van Dusen is a trustee of the William Beaumont Hospital, Royal Oak, Mich., the Cranbrook Schools, Bloomfield Hills and the Arnold Home for the Aged in Detroit. He retired from Detroit Edison Company some years ago, lives at 625 Bennington Dr., Bloomfield Hills, Mich. . . . **Ed Burdell** retired as Dean of Rollins College and is now active as educational consultant for Cranbrook Foundation, Detroit, and the National Recreation Assn., New York. While at Rollins our distinguished educator classmate directed graduate programs, reorganized committees on admissions, academic standing, scholarships and financial aid, and strengthened the branch at Patrick Air Force Base. He received an honorary doctor of laws citation from Ohio State University and has served as advisor and directed numerous civic and educational projects during his career. Dr. Burdell and his wife reside at 521 Dommerich Dr., Maitland, Fla. Your classmates are proud of you, Ed, and wish you many more useful and happy years. . . . **Henry Blau** continues to pile up honors and kudos. The author of more than 50 publications, a professor of glass technology at Ohio State and holder of many patents in the glass and ceramics field, he has been awarded a Dupont Fellowship at M.I.T., the S. B. Meyer Jr. Award, the Toledo Glass and Ceramic Award, and the Alumni Merit Award of Carnegie Tech.

Bill Dean of Manchester, Mass., and former President of Cape Ann Tool Company, has been made a board member of the Morgan Memorial Goodwill Industries, and is a director of the Gloucester YMCA, trustee of Addison Gilbert Hospital, director of the Gloucester National Bank and vestryman of St. John's Episcopal Church. Another '20 man continuing to lead an active and useful life. . . . Our class continues on the move, witness the following: **Karl Bean**'s new address is Glenwood Dr., Goffstown, N. H.; **Harold Hedberg** is now at 15 Minnowbrook Ave., Delmar, N. Y. **Charlie Klingler** moved to 4310 E. Keim Dr., Phoenix, Ariz., from Milwaukee; **Freeman Dyke** is at 192 Golfview Dr., Jupiter, Fla. "Golfview" sounds like a good address. **Whitney Swift** has left Pottstown, Pa., for The Groton School, Groton, Mass. **Frank Bradley** may, of course, be found in the fancy new offices of Stone and Webster in the State St. Trust Building, Boston. **Pete Ash**'s address is 66 Thunderhead Pl., Mahwah, N. J.; **John Crowley** is also in Jupiter, Fla., address 299 River Dr.; **Joseph Mahan** is at 212 Glenhaven Lane, Fox Chapel, Pittsburgh, Pa.; **William Nelson** is at 360 Golden Oak Dr., Menlo Park, Calif.; truly we are a far flung bunch of nomads.

I must report with sadness the following deaths. **Eugene Nebolsine** of Leonia, N. J. Gene had retired in 1963 after 38 years as a securities analyst with Keswick Corporation, New York City. After serving in the Russian Navy in World War I he served as a Lt. Commander in the U. S. Navy in World War II. He is survived by his widow, two sons and a daughter. . . . **William MacKay** of St. John, New Brunswick died August 24, 1959. . . . **Zelma Zentmire** of Iowa City, Iowa, also passed away earlier this year.—**Harold Bugbee,** Secretary, 21 Everell Rd., Winchester, Mass. 01890

'21

Greetings and a warm welcome to our 46th year of these monthly meetings around the friendly fireside of the Class of '21. This publication year leads up to the fiftieth anniversary of the actual formation of the Class in September, 1917, an event it is now proposed to observe in mid-March of 1967 or 1968 with an interim reunion on the occasion of the annual "M.I.T. Fiesta in Mexico," sponsored by the M.I.T. Club of Mexico—of which more later. To complete the record of the 45th anniversary year of our commencement, last June marked another in the exceptionally fine series of class reunions which we have enjoyed over the years. Thanks are due Chairman **Mel Jenney** and his entire 45th Reunion Committee—**Mich Bawden, Chick Dubé, Harry Goodman, Chick Kurth, Bob Miller** and **Ted Steffian**—for planning and carrying out a most enjoyable program at an ideal vacation spot. If you were there, you know about all the fun and fellowship of those four memorable days and will excuse the brevity of this report and its omission of so many pleasurable details. If you couldn't make it, we're sorry you missed so much more than these words can convey. In either event, start now to plan your attendance with your wife at what may be the last of our big reunions—the 50th—tentatively set for June 10 through 14 in 1971. Program preparations are already under way around a Cambridge site.

Thursday, June 9, 1966, saw the arrival of a substantial number of members of the Class of '21 at the Griswold Hotel and Country Club in Groton, Conn., to

start the 45th Reunion festivities. Golf and sightseeing attracted many. Others reminisced in the spacious lobby and reviewed the Class pictures and other historical data with which the registration booth was well stocked. Friday and Saturday were the occasion for more golf and longer trips, such as to Mystic Seaport, the Coast Guard Academy and on the Griswold's own stern paddle-wheeler to the Submarine Boat Division of General Dynamics in Groton. Someone was heard to remark that the frequent trips of Polaris and attack submarines on the Thames in front of the hotel made this the best protected class reunion in M.I.T. history. The banquet on Saturday evening provided the biggest surprise and the most pleasant one that Maxine and your Secretary have ever experienced. Mel Jenney opened the after-dinner program with appropriate words of welcome and then introduced our Class President, **Ray St. Laurent.** Modestly terming himself only the catalyst that caused '21 progress to continue at high speed, he proceeded to thank the many individuals who had taken prime parts in reunion and other Class affairs over the years. Our scribbled notes are not decipherable as to all his comments on your Secretary's services to M.I.T. and to '21 and Mac's attendant "suffering." They trail off into one long line, marking the point at which we were both called to the head table to be showered with gifts! A handsome tooled leather book, inscribed to your Secretary, bulges with 52 pages of wonderful, considerate, heart-warming, reminiscences and congratulatory letters from all you grand classmates! It is now proudly displayed where all who visit us in Brielle can be duly impressed with the strong bonds of friendship and the great depth of feeling for which the members of war-born '21 have always been famous.

But that wasn't all! Next came a gorgeous Gorham platter, engraved in appreciation to your Secretary and bearing an M.I.T. seal that is a notable tribute to the engraver's art. Still more—a well and tree plank to fit the platter, decorated for the occasion with a whole set of Uncle Sam's High-denomination legal tender! Then for Maxine too, a whole set of glamorous silver candle holders to grace our festive board! From both of us to you and yours go our sincerest thanks and appreciation from the bottom of our hearts! Please come visit us in Brielle and help us use these grand gifts.

Ray called upon Class Vice-president **Irv Jakobson,** who is also 50-Year Gift Committee Chairman. Jake expressed the hope for generous donations and deferred giving throughout the coming five years, which are totaled for our 1971 gift, and thanked all for the customary generosity with which '21 has always responded. **Cac Clarke**'s secretarial report took the form of a supplement to the displayed volumes of '21 class news from the Technology Review back to their inception in the November, 1921, issue. The second class to enter the new Cambridge buildings, he reported that '21 still has some 600 names on its mailing list, another 120 have not maintained mailing addresses and 306 have passed away. A minute of silence was observed for the 76 who have left us since the 40th Reunion in 1961. In recent years, '21 has been represented at the Institute by 73 students of younger generations, comprising 65 sons, 1 daughter, 4 nephews, 1 grandson and 2 grand-nephews of members of our Class. They have attended Technology over a 25-year span from the classes of '42 through '67, except for '45, '61, '62 and '64. The largest known families in the Class—eight children each —are those of Margaret and **Bill Sherry** and the late **Lou Hurley.** The late **Winfield S. Libbey** had the largest number of grandchildren—25. Cac extended the congratulations of all to Bill Sherry on his election as Vice-president of the Alumni Association of M.I.T. Further congratulations went to Cecilia and **Arnold Davis** and to Marge and **Jack Kendall** in honor of their 40th anniversaries; to Muriel and **George Owens,** who were celebrating their 39th anniversary that very day; and to Kay and **Phil Nelles,** who had just observed their first anniversary. **John Barriger** was singled out for his amazing success in revitalizing the Missouri-Kansas-Texas Railroad, for which his business cards read "Traveling Freight Agent . . . and President." Acknowledgment was made of a telegram from M.I.T. President Howard W. Johnson, which read: "My best wishes to the Class of '21 on its 45th Reunion. I look forward to meeting you in Cambridge later this weekend." A wire of good wishes also came from **Norm Insley.**

Chairman **Sumner Hayward** presented the report of his Nominating Committee, which included **Phil Coffin, Ed Farrand, Al Lloyd** and **Chick Kurth.** Duly nominated and subsequently elected were: **Raymond A. St. Laurent,** President; **Irving D. Jakobson,** Vice-president; **Carole A. Clarke,** Secretary-treasurer; **Edwin T. Steffian,** Assistant Secretary; **Robert F. Miller,** Photohistorian; **Edmund G. Farrand,** Class Agent and Estate Secretary; **Edouard N. Dubé,** Class Agent; **Henry R. Kurth,** Class Representative on the Alumni Council; **George A. Chutter,** 50th Reunion Chairman; **Paul H. Rutherford,** 50th Reunion Vice-chairman. **Mel Jenney** then distributed the handsome M.I.T. souvenirs, suitably dated for the occasion, one set for all the ladies present and another style for the men. He also awarded a handsome special set of M.I.T. glassware to Ray St. Laurent in recognition of his 45 years of service as Class President. A special gift also went to Assistant Secretary Ted Steffian for his long service to the Class. M.I.T. pewter pitchers were won as door prizes by Ethel Emery and Muriel Owens; M.I.T. neckties went to **Al Addicks** and **Joe Wenick.** Mich Bawden presented a "retirement platform," which we'll try to reprint in a later set of class news. He also awarded the golf prizes, in the form of various sets of M.I.T. glassware. For the distaff side, low gross was won by Marion Knight and high gross went to Edna Coffin. For the men, the lowest score prize was won by **Ollie Bardes** and lowest net by Buzz Burroughs, a welcome guest from the Class of '20. The kickers prize went to **Lou Mandel.** The extensive Class collection of movies and slides provided merriment for the balance of the evening.

The eve of Alumni Day offered a welcome opportunity to greet Chairman of the Corporation Jim Killian, '26, retiring President Jay Stratton, '23, and President-designate Howard Johnson at the reception and dinner held in the new Julius A. Stratton Student Center. The Class of '21 was warmly thanked by all three for its letters of good wishes. During the informal dinner, it was suggested that President Johnson be inducted into the Class of '21, to which he graciously agreed. Whereupon, formal adoption papers were prepared, signed by the Class officers and all '21ers in attendance and respectfully presented to our new President. His visit with his new classmates during the Alumni Day dinner will be remembered by all as one of the high spots of our 45th anniversary. Your Secretary acknowledges receipt of a personal letter of thanks from our distinguished classmate, sending his best regards to everyone in the Class.

The Alumni Day program provided the usual wide variety of interesting events. A new item on the schedule was the impressive Memorial Service in the chapel for alumni who passed away since Alumni Day 1965. Prepared and delivered by alumni, the service was printed in a pamphlet which also listed the names of seventeen '21 men. At the close of Alumni Day, it was a tired but happy group that slowly made its way back to the dormitory facilities provided by the Institute. At breakfast in Walker Memorial the next morning, there were various '21 groups in serious discussion. We regretfully went our various ways after five remarkable days of sheer pleasure. Present at the reunion and Alumni Day were: Anne and Wally Adams, Mary and Allen Addicks, Ollie Bardes, Elizabeth and John Barriger, Helen and Mich Bawden, Rod Bent '19, Jane and Dayton Brown, Buzz Burroughs '20, George Chutter, Mary Louise and Rich Clark, Maxine and Cac Clarke, Edna and Phil Coffin, Vernon Cole, Dorrit and Larry Conant, Bertha and Bob Cook, Vina and Ray Cooper and their guests, Dr. and Mrs. Howard J. Eddy, Jr., Claudia and Josh Crosby, Cecelia and Arnold Davis, Beryl and Elmer Davis, Kay and Ed Delany, Maida and Chick Dubé, Ethel and Bill Emery, Helen and Ed Farrand, Mary and Ben Fisher, Augusta and Frank Flaherty, Edna and George Gokey, Sarah and Harry Goodman, Doane Greene, Ann and Mark Hamburger, Doris and Bob Haskel, Katherine and Don Hatheway, Alex and Munnie Hawes, Betty and Sumner Hayward, Ed Haywood, Betty and Dug Jackson, Ruth and Irv Jakobson, Anne and Mel Jenney, Phil Johnson, Grace and Al Kiley, Marion and Chet Knight, Laurie and Chick Kurth, Emma and Al Lloyd, Winifred and Ed Mac Donald, Mildred and Don McGuire, Lou Mandel, Helen and Bob Miller, Joe Morrell, Marion and Dick Morris, Kim and Don Morse, Mae and Harry Myers, Kay and Phil Nelles, Betty and Arthur Newton, Warrie Norton, Muriel and George Owens, Jim Parsons, Ruth and Charlie Pool, Martha

and Bill Ready, Harry Rosenfield and son, Jay '51, Jack Rule, Paul Rutherford, Helen and Ray St. Laurent, Anne and George Schnitzler, Celia and Steve Seampos, Madeline and Rufe Shaw, Bill Sherry, Rigi and Saul Silverstein, Lyall Stuart, Ola and Hank Taintor, Pearl and Horace Tuttle, Art Wakeman, Anna and Bill Wald, Ella and Al Wason '20, Pearl and Al Wechsler, Joe Wenick, Charlie Williams, Sarah and Ev Wilson, Margaret and Dick Windisch, Winifred and Royal Wood, Lucile and Ralph Wood, India and Dave Woodbury, Helen and Miles Zoller. Your Secretary has the complete set of photographs taken at the Reunion and will be glad to supply the serial numbers of any specific groups you may wish to order from the photographer.

Several phone calls from Ray St. Laurent and a long written report from Sumner Hayward bring us up to date on '21 participation in the Seventh Alumni Officers Conference and the Alumni Seminar, both of which took place last September in Cambridge. Present at the conference were: Mich Bawden, George Chutter, Larry Conant, Josh Crosby, Ed Delany, Chick Dubé, Sumner Hayward, Irv Jakobson, Sam Lunden, Joe Morrell, Ace Rood, Ray St. Laurent, Bill Sherry, Ted Steffian and Joe Wenick. This was the largest representation of any class. Chairman George Chutter of the 50th Reunion Committee held a planning meeting one evening during the conference, attended by 11 of the above plus Mel Jenney, Chick Kurth, Bob Miller and Paul Rutherford. Chairman Irv Jakobson of the 50-Year Gift Committee held an organization session another evening, with 12 men including Ed Farrand, who flew from his Georgia home just for the evening. The Alumni Seminar was attended by Dorrit and Larry Conant and Helen and Ray St. Laurent. During the Alumni Officers Conference, it was announced that the total giving of the Class of '21 through the Amity Fund this last season set a new record for 45-year classes with the amount of $50,468. Contributors from the Class constituted 47% of the active roll. It will be remembered that our 40-year gift also constituted a record amount at that time, which has since been exceeded. Also announced was the establishment by friends this year of memorial funds in honor of the late **Norman F. Patton** and **George W. Pollock.** Some time ago two scholarship funds were established in memory of the late **John A. Grimmons.** Ray reports that our own Rev. Dr. **Samuel H. Miller,** Dean of the Harvard Divinity School, gave an excellent sermon in the chapel on the Sunday of the Alumni Seminar. He also says that **Ace Rood** is now assistant attorney general of the Commonwealth of Massachusetts, handling criminal cases.

George F. B. Owens, P. O. Box 93, Islip, N.Y. 11751, has sent us the following most welcome report: "This is to inform you that a postscript to the 45th Reunion of the Class of '21 was held at the Manhasset Yacht Club on June 18, 1966, at the behest of Irving D. Jakobson. In attendance were Vina and Ray Cooper, Ruth and Irv Jakobson, Muriel and George Owens. It was unanimously voted at this joyous conclave that all those present would meet again in March, 1967, at Mexico City and it was fervently hoped that all the rest of our Class would join in the crusade that will be so ably led by our beloved President Ray St. Laurent. With high regards to you, I am duly reporting the above as requested by those present. Your assistant assistant to the assistant to the only Secretary, George." Ray is in touch with the M.I.T. Club of Mexico as to whether a 1967 or 1968 date or both would be suitable for our large group. If you are interested and haven't received further information by the time these notes arrive, write or phone your Secretary at the Brielle address below, where the phone number is 201-223-4698. Our sincere thanks to the Cooper, Jakobson and Owens couples for initiating another of those extra-enjoyable interim reunions to add to our previous ones in Cuba and Mexico. . . . Further reunion aftermaths: **Mel Jenney** has written to express his appreciation to the members of the Reunion Committee for their helpful cooperation. He also sent his heartiest thanks to all those who attended for their good nature and happy spirit in the various meetings in Groton and Cambridge. . . . We all missed Helen and **Ed Farrand** on Alumni Day and it was a great relief to have an answer from them shortly afterwards, despite the message that they had both been confined to their Boston hotel for the day with a physical upset. They are completely recovered. Ed says he is profoundly disappointed not to have been present, especially since he had written to so many '21ers that he would see them then. Ed also tells us he is anticipating moving his home from Leesburg, Ga., to LaJolla, Calif., to be nearer to son David. . . . We phoned **Ted Steffian** on Alumni Day and found him up and around but not then equal to the rigors of a full day on the campus. We are happy to report he has since resumed his usual schedule. Safety reminder from the rough experiences of both of your Secretaries: Don't ever budge your car an inch until you and all the occupants have securely fastened seat belts!

At this writing, Maxine and your Secretary are expecting a visit to Brielle by **Robert F. Miller,** Class Photo-historian, on his return from a New England vacation with Helen to West Chatham, Mass. Bob has a new home in the Washington area at 7910 Birnam Wood Drive, McLean, Va. 22101. Better than that Birnam Wood shall come to Dunsinane is to have the owner come to Brielle! Bob reports that his son, Bob, Jr., has been appointed manufacturing engineer at the Passaic, N.J., plant of Continental Can Company. At 29, he will be the youngest man to hold that job and will be the No. 3 man in the organization of some 2,000 employees. Sounds like an important responsibility. . . . **Samuel E. Lunden** retired as President of the 4,000-member Los Angeles civic group known as "Town Hall," but continues his association as a member of the board of governors. . . . **Ray** and Helen **St. Laurent** report a recent visit from **George** and Marion **Chutter** to their Manchester, Conn., home. At their Vinalhaven, Maine, home, "Saints' Haven," visitors included Rigi and **Saul Silverstein** and Josephine and **Bill Loesch.** Ray says Saul is on the go so much they rarely meet at Rogers! The Loesch couple had lunch with the Saints while their boat went on to Vinalhaven village. They had just returned from an extensive trip through Africa, which precluded attendance at the Reunion and Alumni Day. . . . **Philip R. Payson,** retired district manager of SKF Industries, reports a change of address from South Euclid, Ohio, to Apt. 106, 2544 First St., Ft. Myers, Fla. 33901, but says he is building a new home in the Tanglewood section for occupancy about the time these words appear in print.

Don't forget to return that IBM card to the Alumni Register with your correct address for the new issue of the volume. And, while you're about it, enclose a bit of your news so your Secretaries can maintain this column as you would like to have it. Happy Thanksgiving—and share a little of it with us!—**Carole A. Clarke,** Secretary, 608 Union Lane, Brielle, N. J. 08730; **Edwin T. Steffian,** Assistant Secretary, c/o Edwin T. Steffian and Associates, Inc., 19 Temple Place, Boston, Mass. 02111.

'22

After a perfect summer holiday in Buffalo, your Secretary is happy to get back to 1922 Class Notes. The last issue for July was written in May, leaving a full file of Alumni Day activities and summer happenings for dictation. It was a beautiful weekend in June for the Reunion and alumni activities where we heard from Killian, Stratton, and Johnson. Among those present on June 13 were C. Yardley Chittick, Richard E. Downing, Earl H. Eacker, Warren T. Ferguson, Whitworth Ferguson, Morris H. Gens, G. Dewey Godard, Morris J. Gordon, Oscar H. Horovitz, William L. Hyland, Abbott L. Johnson, Julian Lovejoy, C. Randolph Myer, Fearing Pratt, William A. Riley, William W. Russell, Roscoe E. Sherbrooke, Hugh M. Shirey, Dale D. Spoor, Florence W. Stiles, Wilfrid M. Thomson, John L. Vaupel, Frank T. Westcott, Karl L. Wildes.

Because of **Parke Appel's** European trip, the Sunday party was shifted to **Buck Eacker's** house on Beacon Hill. This was the usual "How's everything with you" group and included some additional classmates: William B. Elmer, John M. Goodnow, Dr. John W. Strieder, Professor John T. Wulff, Robert Tonon, Kenneth R. Sutherland, C. George Dandrow, C. Hall Baker. After special refreshments by **Roscoe Sherbrooke,** the class looked much younger and more successful than in many past years. To those of you who missed coming, don't ever do it again. The general program was especially interesting, including very recent color shots of Gemini 9 flight and slides of the moon surface. . . . We heard that **Bill Elmer** of Boston designed the reflector for the

acquisition light on the Gemini rendezvous flight and is working on a special light for the Miss America Contest. It's quite a change from his days of doing drawings for VooDoo. . . . **F. Willett Walton, Jr.** has retired from Young and Rubicon and started a nursery in Maine which grows ornamental evergreens for foundation planting. Luke invites the class to come up to the farm and have fun helping plant the little beauties. . . . **Ronald G. MacDonald** retains his Jackson Heights, N.Y. address, but is now spending most of the year in Kalamazoo, Mich., as executive secretary of the Paper Technology Foundation at Western Michigan University. . . . **George F. Hamer, Jr.,** of New Castle, N.H., has retired from teaching at the Mercersburg Academy after 40 years of most interesting and constructive experiences. . . . Professor **Edward L. Bowles** of Wellesley Hills was made a director of White Consolidated Industries, after acting as interim president. . . . **Percy B. Bass** has retired as of last March to Charlottesville, Va. . . . **Adolph B. Alland** has moved to San Rafael, Calif., in Marin County. He had hoped to visit with us at reunion while seeing his father in Brookline—now in his 96th year. . . . **James W. Kinnear, Jr.,** has retired from the position of vice-president in production, United States Steel Corporation, and is currently acting as consultant for research projects sponsored by the Committee of Ten Mill Products Producers, of American Iron and Steel Institute. . . . **Isidor R. Loss** of Phillipsburg, Pa., has been appointed to the Educational Council. He is an engineering consultant after being in charge of Turbo-Products Engineering at Ingersall-Rand Company. Loss is now chairman of the Children's Committee of Warren County. . . . **Chester A. Moore** has retired as head of the Department of Civil Engineering at the University of Idaho. He's an author of internationally recognized papers on civil engineering education. Chester plans to stay in Moscow to undertake promotion of a retirement committee. He had previously been active in the committees of the University Heights Corporation—a residential community south of the campus.

The sympathy of our class goes to the family of **Arnold E. Howard** of Lexington, Mass., former chief of recreation with the State Department of Natural Resources. He had retired a few months previously and moved to Chelmsford after 33 years with the Department. . . . **Oscar Horovitz** has reported the death of **Sigmund Cohen** of Detroit, Mich. He was chief engineer in the Detroit Expressway Program until his retirement two years ago. He had been with the city 36 years. During World War II he served in the United States Army Corps of Engineers and helped build the Burma Road. He retired in 1960 as a lieutenant colonel in the Army Reserve. . . . Our sympathy is also extended to the family of **Jack A. Tishman,** a real-estate man who helped develop many areas around New York City. He was an avid salt water fisherman and was also a collector of paintings and sculptures. He had one of the largest collections of United States, United Nations, Vatican and Israel stamps. . . . Many of us remember with pleasure the 1922 days in the electrical laboratory with **John Henry Teeter** and were saddened by his death at Memorial Hospital in New York in April. Jack was former executive director of Damon Runyon Memorial Fund for Cancer Research and had previously served as research director of the American Cancer Society. Last year he became Executive Vice-president of Germfree Products of St. Petersburg, Fla. During World War II Jack Teeter was technical aide and liaison officer under Dr. Vannevar Bush and later became consultant to the chairman of the Senate Interstate and Foreign Commerce Committee. Jack was also a director of the Walter Winchell Foundation, which provides expenses to operate the Runyon Fund. He was a director of many organizations and of technical fraternities and will be missed by his many friends.

Among the new addresses received are the following: **Bennett H. Levenson,** Rockville, Md.; **Manual Shampanier,** Coral Gables, Fla.; **Roger S. Walke,** Tuscon, Ariz.; **George P. Whitten,** Middleboro, Mass.; **Robert M. Chase,** Ashland, Mass.; **Percy B. Bass,** Charlottesville, Va.; **George L. Erickson,** Boynton Beach, Fla.; **H. Douglas MacDonald,** Springfield, N.J.; **Edward A. Ash,** Detroit, Mich.; **Keble B. Perine,** Pearce, Ariz.; **Frank H. Wing,** Newton, Mass.; **Leslie D. Price,** South Harpsville, Maine; **Rudolph F. Whitelegg,** Troy, N.Y.

You will constantly be reminded this year of the 45th reunion at the Wianno Club next June. It will start on Thursday the 8th or Friday the 9th and extend through Sunday, June 11, so that we can be at Alumni Day at the Institute on Monday, June 12. Please mark it loud and clear!—**Whitworth Ferguson,** Secretary, 333 Ellicott Street, Buffalo, N.Y. 14203—**Oscar Horovitz,** Assistant Secretary, 33 Island Street, Boston 9, Mass.

'23

Elsewhere in the November Review you will find a picture taken by your Class Secretary of Dr. and Mrs. **Julius A. Stratton** receiving the class present, a silver tray, as a suitable commemoraiton of his retirement as President of the Institute. We think both Jay and Kay were surprised and delighted at this recognition from the Class. Your class officers voted to have the Class recognize this event in a suitable manner and to defray the expenses from the class treasury. You support this treasury by class dues requested at about five-year intervals. . . . The following classmates were reported in attendance on Alumni Day: Horatio and Mrs. Bond; Hugh S. and Mrs. Ferguson; E. Louis and Mrs. Greenblatt; Herbert L. Hayden; George A. Johnson; David Kaufman and two daughters; Charles S. and Mrs. Keevil; Elliot P. and Mrs. Knight; Forrest F. and Mrs. Lange; Howard A. and Mrs. Lockhart; Edward F. and Mrs. McSweeney; Charles Mongan; Harold C. Pearson; Howard F. and Mrs. Russell; David W. and Mrs. Skinner; Philip C. Smith; Julius A. and Mrs. Stratton; Dorothy W. Weeks. . . . Dr. Julius A. Stratton was a guest of honor at the dinner meeting of the M.I.T. Boston Stein Club May 3. The dinner marked the occasion of reaching the $200,000 figure in the Stein Club's freshman scholarship fund.

The following quotes from a nice letter from **James A.(Pete) Pennypacker,** 1327 Ocean Avenue, Apt. F, Santa Monica, Calif., break Pete's long silence. "It occurred to me that those of us who are fortunate to carry on could ease the burden of class notes for you if we would take a few minutes of our lighter schedules to send you a thumbnail sketch of some of our own professional experiences. This statement may shock you, because I think I have never sent you in any notes about myself before. In this regard I am probably representative of the majority of living members of the class. May I say right here that you and Bert McKittrick are doing a good job in keeping the class notes interesting." Thanks, Pete, for reminding our classmates to send news to us. Also thank you for your kind remarks about the job we are trying to do to keep the Class News interesting, and also for your contribution for this issue. Pete continues, "Tell Walt Dietz that Doris and I want to know what town he is mayor of and what new interests he is pursuing." (That is a request, Walt, and your Secretary will be expecting to hear from you.) Pete continues, "Now a word about myself. That word is 'shipbuilding,' which I entered in 1917, and, with the exception of time out to study Naval Architecture at M.I.T., I have been engaged in it ever since. My experiences have been varied, including yard work at New York Shipbuilding Corporation, design work at Cramps in Philadelphia, research at the Marine Engineering Corporation also in Philadelphia, Technical representative for the National Council of American Shipbuilders on Safety of Life at Sea in Washington, D.C., assistant to the President of the Council in New York, manager of Estimating for the Shipbuilding Division of The Bethlehem Steel Company with central offices in Quincy, Mass., until retirement in 1965, Secretary and Director of the Dauntless Shipyard in Essex, Conn., and now a cosultant for the RAND (research and development) Corporation in Santa Monica, Calif. I am a permanent member of the Society of Naval Architects and Marine Engineers, have appeared before courts of claims in connection with ship losses, have testified before the Merchant Marine and Fisheries Committee of the House of Representatives and the Commerce Committee of the Senate, have designed and built my own sailboat, in which I taught my three children to sail, have performed special work for the shipbuilders council toward reductions of the costs of shipbuilding in the United States, was president of a Tennis Club and vice-president of the Y.M.C.A. in Quincy, Mass., was head of a church, was director on a hospital board, played the cello in concerts, in symphonies, and in string quartets, acquired a beautiful cottage on Lake Winnipesaukee, N. H., have a 'dream-house' in Essex, Conn., on an

acre-and-a-half of property overlooking the Connecticut hills and the river below, have built my own skating rink for figure-skating where I have taught my children some of the figures, and have had a generally colorful existence. In athletics about all I have left is a competitive spirit. You may remember that at our 40th reunion, **Frosty Harmon** and I proved that we were still young by standing on our heads. I believe you took a picture of this. I still keep up by skating in the winter and I swim whenever I get a chance in the summer. Here in Santa Monica I am in the Pacific Ocean almost every day. Although I played tennis until I left Quincy in 1965, I have not continued this sport in Connecticut. Doris and I have three children, all married, and seven grandchildren. My son was graduated from M.I.T., but unlike his father, he is a 'brain.' He is in the Instrumentation Laboratory at the Institute." Pete did not mention that when he built a boat in his backyard he usually had a formal launching. Your Secretary learned this from a U. S. Navy Captain who attended one of Pete's launchings.

Bertrand A. McKittrick reported on August 11 that he had just returned from a five-and-a-half day cruise on the St. Lawrence River from Montreal to St. Pierre, which is on the island of Miquelon just off the Newfoundland coast. On arrival at St. Pierre the fog was so thick that they had to have a radar boat escort to get the people ashore in launches; however, two hours later the fog lifted and the sun came out, at which time they were informed that it was the first time in 50 days that the residents had seen the sun, due to fog. Bert also reported that **Marvin Eickenroht**, Maverick Building, San Antonio, Texas, had received a Fellowship Award by the American Institute of Architects at the Denver Convention.

Joseph Fleischer, 340 Parker St., Newton Center, Mass., reports that he has expanded his operations of Certified Pest Control Company with branch offices in Lynn, Mass., and Providence, R.I. He says further, "Hope to see a large turnout for our 45th reunion. Now have six grandchildren." . . . Wall Street Transcript of May 23 reports the following about **Ragnar D. Naess:** "CFA, senior partner of Naess and Thomas, N. Y. A native of Norway; graduated from M.I.T. (B.S. and M.S.) and Harvard Graduate School of Business Administration (MBA). Commenced his career in economic research with the Federal Reserve Bank of N. Y., later serving with the Investment Research Corporation, Detroit, Mich.; Goldman Sachs and Company, N. Y.; and Tri-Continental Corporation. Founded N & T in 1939. Also a director of several companies and mutual funds. A member of the American Economic Association, American Statistical Association, Institute of Chartered Financial Analysts, Investment of Counsel Association of America, The New York Society of Security Analysts, Inc.

Benjamin B. Drisko, Harrington, Maine, 04643, writes, "At last I am back on the farm—only it isn't much of a farm any more. Now it's Christmas trees and a little dabbling at nursery stock." . . . **Atherton Hastings,** 614 Paxton Road, Florence, Ala., writes, "I retired from TVA March 1, 1966, after 25 years. Am working on a building for a Unitarian Fellowship, overhauling two cars, and repairing house. Hope to get to Commencement in June." . . . **Dale S. Davis,** lately Professor and Head, Department of Pulp and Paper Technology, University of Alabama, retired June 30, after 42 years about equally divided between industrial work and teaching in the chemical engineering field to spend full time as editorial consultant. Address: Special Projects, Box 6, Bailey Island, Maine 04003. He is eager to hear from classmates, and available for speaking engagements. He writes further, "Who, among '23 men, remembers SGWMTPG (Society of Gentlemen Who Married Their Prom Girls)? See Review in 1927-28. Miss Boston was my Prom Girl in 1923 and 1924 and my Prom Girl in 1930 and 1936. Now, in 1966, mother and children out of danger and doing as well as could be expected." (Your Class Secretary is eligible for the SGWMTPG.) . . . **William LaLonde, Jr.,** of Short Hills, N. J., Chairman of the Civil Engineering Department of the Newark (N.J.) College of Engineering faculty, retired in June. Professor LaLonde joined the NCE faculty in 1929. He was born in Chicago, raised in Evanston, Ill., educated at Northwestern University and M.I.T. He earned an M.S. in Civil Engineering in 1938 from the University of Michigan. He spent five years in engineering work with the Southern Pacific Railroad with the U. S. Geodetic Survey off the coast of Oregon, with the contractor building the foundation for the Arlington Memorial Bridge in Washington, D.C., and with the construction of a chemical plant for Atmospheric Nitrogen Corporation at Hopewell, Va. He taught at Swarthmore College for one year before joining NCE. Professor LaLonde's long association with the College was interrupted only during World War II, when he served with the Civil Engineers Corps of the U.S. Navy from 1941 to 1946. (Retired a Captain, CEC, USNR on February 21, 1961.) Returning to NCE in 1946 he was appointed chairman of the civil engineering department that year. Throughout his years at NCE Professor LaLonde has been active in the professional engineering and education societies. He is a licensed professional engineer in New Jersey and New York and a member of the state and national Society of Professional Engineers. He has been chairman of the civil engineering division of the American Society of Engineering Education, a director of the American Society of Civil Engineers, vice-president of that society (and now treasurer, ASCE) and chairman of a number of its important committees. Professor LaLonde has found time to write several books and texts and to act as consultant to groups such as the North Jersey District Water Supply Commission, the New Jersey State Civil Service and the U.S. Army Engineers School in Virginia. His writings include Professional Engineers Examinations, 1956, 1960; and service as editor-in-chief of Concrete Engineering Handbook, 1960, published by McGraw-Hill Company. In commenting on Professor LaLonde's pending retirement, Dr. Van Houten, President of Newark College of Engineering, noted that the civil engineering department had grown to four times the size it was when Professor LaLonde joined the school. Professor LaLonde resides with his wife at 77 Jefferson Ave., Short Hills, N.J. She is the former Marion Howard of Rochester, N.Y.

The Oil Daily of May 10 reports that **Cecil H. Green,** Honorary Board Chairman of Geophysical Service, Inc., geophysical exploration subsidiary of Texas Instruments, Inc., was one of the originators of the summer student cooperative plan in 1951, which held its 16th annual earth sciences orientation conference at Southern Methodist University at Dallas June 14-17. The program brought together as speakers some 35 of the nation's leading oil explorationists, educators and government officials concerned with earth, oceanographic and space science programs. Mr. Green figured prominently in the program again this year as in all previous years since the plan was established. . . . "Railroad Head Built Order Out of Chaos" is the title of a long piece in the Decatur, Ill., Review of May 4. A particular talent is needed to rebuild a washed-out Nebraska railroad in five months, transform "two streaks of rust" with high mountains and low traffic into the money-making Denver & Rio Grande and whittle the high costs of the New York Central System with technology and cybernetics. But something else is required to thread the legal, financial and political maze leading to a successful railroad merger. **Alfred E. Perlman** has prevailed in both areas. There is another long article on this subject in the New York Times for April 28 entitled "Running the Road." Additional information on this merger was given in the July issue of The Review.

Edward M. Conley of 22 Marion Ave., Salem, Mass., died July 25 after a long illness. He was a structural engineer employed by Marsh and McLennan Company of New York and Boston for 35 years until his retirement in 1961. He was born in Boston and resided in Winchester for many years. He lived in Beverly for the past five years. He was a veteran of World War I and was a member of Earle T. Wardell Post, American Legion and St. Mary's Holy Name Society. He leaves his wife, Gladys K.; one son, Edward M. Conley of Tewksbury; a daughter, Mrs. Burton Ewalt (Mary Jean) of Orlando, Fla.; three brothers, a sister, and nine grandchildren. . . . Professor **James M. Robbins** of 83 Maplewood Ave., Maplewood, N.J., has been appointed as chairman of Newark College of Engineering's Civil Engineering Department. He will be responsible for the administrative and academic operation of the department on both undergraduate and graduate levels together with the coordination of civil engineering activities with those of other departments. He has been a member of the Newark College of Engineering faculty since 1929. He was promoted to assistant professor in 1933 and to full professor in 1949. He has been associate chairman since 1946. He succeeds Professor **William S. LaLonde** of Short Hills,

N.J., who retired as chairman of Civil Engineering this spring. In making the announcement of Robbins' appointment Dr. Robert W. Van Houten, President of the College, said: "We are particularly fortunate to have such a capable and talenetd teacher as Professor Robbins take on the additional responsibility of heading the civil engineering department. Two generations of engineers have already benefited from his association here. We are all pleased that he is willing to take on more work in the face of the current growth phase that Civil Engineering is now undergoing." After work as an assistant engineer for the Senate Committee investigating the Bureau of Internal Revenue (1924-25), he conducted geodetic surveys on the Peru-Chile boundary for the Special Commission on Boundaries of the Tacna-Arica Arbitration. He then acted as a field engineer on American construction jobs, including dock construction in the Harlem River, hydraulic fill in Atlantic City; foundations on the Arlington Memorial Bridge, Washington, D.C. and on the Kill Van Kull Bridge in Bayonne, N.J., before joining NCE in 1929. He held a reserve commission in the U.S. Army Corps of Engineers from 1923 to 1939. He has done summer teaching at the M.I.T. and Cooper Union Surveying camps, consultant work in sanitation and mosquito control, and has been a consultant on research for U.S. Army Ordnance. Since 1951 he has supervised the professional engineer examinations for the New Jersey State Board of Professional Engineers and Land Surveyors. He is a fellow of the American Society of Civil Engineers and is a past president of the Essex County Society of Professional Engineers. He is active in several professional groups including the American Society for Engineering Education, the American Water Works Association, the N.J. Water Pollution Control Association, the National Society of Professional Engineers and several professional honor societies. His publications include Practical Astronomy (1948), Special Surveys (1953), and Engineering, a Discipline (1937 and 1954). He is married ot the former Virginia J. Peters of Lenox, Mass. They have two married daughters and five grandchildren.

Marvin Eickenroht of 128 Grant Ave., San Antonio, Texas, was one of 60 architects throughout the nation given 1966 fellowships in the American Institute of Architects. He has been a practicing architect in San Antonio for almost 40 years. He is a past president of the San Antonio Chapter of the AIA and also of the West Texas Chapter. He has headed the Texas Society of Architects Committee on preservation of historic buildings for more than 10 years. He is the author of "The History of the Development of Architecture in Texas," and articles on architecture published in architectural magazines. . . . **John E. Burchard** has been appointed Acting Dean of the College of Environmental Design on the Berkeley campus of the University of California. He will serve in an interim capacity pending a permanent appointment to fill the post. The college includes the departments of architecture, city and regional planning, landscape architecture, and design, as well as centers for research. He was dean of the School of Humanities and Social Science at M.I.T. for 16 years. He came to Berkeley in 1964 as Visiting Professor of Environmental Design. He has held academic appointments in many institutions throughout the world, including visiting professorships at the Berkeley campus College of Engineering in 1954 and 1955. He has been well known for a quarter of a century for his critical and historical writings in architecture, the other visual arts, and the style of cities. His latest book, just published, is The Voice of the Phoenix, a study of the rebuilding of Germany. He has also written The Architecture of America with Albert Bush-Brown, and The Historian and the City with Oscar Handlin. In 1948 he was awarded the Presidential Medal for Merit, and he holds honorary degrees from the University of Michigan and Union College. The title of Officier de l'Ordre des Arts et des Lettres, of France, was recently conferred upon him. He is a former president of the American Academy of Arts and Sciences. A native of Marshall, Minn., he has served in numerous consultantships in the fields of architecture, education, science and technology.

The Drycleaning World for June says of **Harold H. Leary** with reference to "Today's Leary's Cleantown," that he "is right on the button as far as new trends are concerned. His five stores are located on strategic spots pre-researched by market research firms, had adaptable blueprints for allocating a wing for future expansion. All stores have ample parking and provide the coming new trend of coin-op cleaning. Leary's operations are half drycleaning and half coin-op for one-stop cleaning services. Thus the store's title: Cleantown. . . . **Alvah G. Hayes,** principal of North Andover High School, retired August 31. A native of Hollis, Maine, he was named principal of the former Johnson High School in North Andover in 1932. He had been a teacher-coach at the high school since September '23. He became the first principal of the new North Andover High School, which was first opende in 1955, after the Johnson High School was closed. Completion of this school year rounded out a career of teaching and school administration spent entirely in North Andover, and encompassing 43 years, 34 of them as high school principal. He also served for a time as interim superintendent of schools. He holds a Master's Degree in Education from Boston University awarded in 1946. He was coach of baseball, football and basketball at Johnson High School until his appointment as principal. He himself was a four-letter man at Taunton High School. He held the record at M.I.T. during 1920-21 for running the 100-yard dash in 10 seconds. For many years, even after becoming principal, Mr. Hayes continued to teach senior mathematics in North Andover.

George W. Gilman of 40 Fifth Ave., New York, completed a Bell System career of more than 43 years, when he retired on September 1 as Executive Director of the Data and PBX Division of the Bell Telephone Laboratories. He began his career with the New England Telephone and Telegraph Company. He later served with the American Telephone and Telegraph Company and Bell Laboratories in the Far East during the establishment of transpacific telephone service. He was awarded the Order of the Rising Sun by the Japanese Government. At the outbreak of World War II in 1939 he was assistant technical representative of both companies in Europe. In 1940 he returned to Bell Telephone Laboratories here. During the war he served as a member of and consultant to various committees of the Office of Scientific Research and Development. He assumed charge of Systems Engineering when this organization was formed in Bell Laboratories in 1951 and came to his present post in 1955. Mr. Gilman has been granted 12 patents and is the author of a number of published technical articles. He is a fellow of the Institute of Electrical and Electronics Engineers and a member of the Operations Research Society of America. Mr. Gilman and his wife, Dorothy, moved to New York City from Short Hills, N.J., in 1953. They also have a home in Rockport, Mass.

George W. Gilman, '23

Word has been received from the Alumni Office of the following deaths, but no details are available at this time: **Lester S. Champion,** 35 Sutton Place, New York, N.Y. 10022 (no date given); **George F. Cook**, 2833 Lyndale Avenue So., Minneapolis, Minn., on July 23; **Ernest N. Gelotte,** 70 Alton Road, Quincy, Mass. 02169, on August 7, 1966; **Fred I. Gilbert,** Box 866, Oroville, Calif., on April 7, 1961; **Thomas E. Huffman,** 4525 Emerson Ave., Dallas, Texas, on February 12; **Robert E. Ide,** 129 Main St., St. Johnsbury, Vt., in the spring of 1965; **Arthur B. McKim,** 10990 123rd St., Edmonton, Alberta, Canada; **Raymond H. Starr,** Koch Supplies, Inc., 1411 W. 29th St., Kansas City, Mo. on August 21, 1966; Mrs. **Antoinette Tricot,** 24 Ave. de'l Astronomie, Brussels, Belgium, July, 1966; **Worthing L. West,** 56 Tyler Terrace, Newton Center, Mass. 02159, on June 21, 1966.

On Alumni Day a memorial service for those M.I.T. Alumni who were deceased this past year was held in the M.I.T. Chapel, at 11:15 a.m., and a program including a list of those Alumni was sent to the next of kin for whom addresses were available. . . . The Alumni Office advises of the following changes of address: **J. Allan Abbott,** 251 Dogwood Lane, Stamford, Conn. 06903; **Edwin H. Arnold,** P.O. Box 44, Greene, R.I. 02827; **William H. Blandy,** 2096 N.E. 65th St., Fort Lauderdale, Fla. 33308; **George W. Bricker, Jr.,** American Embassy, U.S. AID, APO, New York, N.Y. 09271; **Winthrop K. Coolidge,** Chicago Copper and Chemical Company, Blue Island, Ill.

60406; **Francis L. Cronin,** The Fountain Head, 3900 No. Ocean Blvd., Lauderdale by the Sea, Fla. 33308; **Harold G. Crowley,** 3044 Cambridge Pl., Washington, D.C. 20007; **Sidney S. Dean,** 6 U.S. Bates Rd., Hingham, Mass. 02043, **Walter Dietz,** Box 2265, Delray Beach, Florida, 33444; **Carl D. Dippel,** 432 Park Drive, Hillsboro, Texas 76645; **Thomas B. Drew,** Old Revolutionary Rd., Temple, N.H. 03084; **Benjamin B. Drisko,** Harrington, Maine 04643; **Michael Drazen,** Drazen Associates, Inc., P.O. Box 11360, 120 North Gay Ave., Clayton, Mo. 63105; **Harland C. Forbes,** Consolidated Edison Co., of N.Y., Room 1610, 4 Irving Pl., New York, N.Y. 10003; **Cecil H. Green,** Geophysical Inc., P.O. Box 5621, Dallas, Texas 75222; **Salvatore A. Guerrieri,** 19 Steepletop Road, Rowayton, Conn. 06853; **Frederick A. Kinch,** 8 Colt Rd., Summit, N.J. 07901; **Fernando de la Macorra,** Cia de las Fabricas de Papal de San Rafael y Anens S.A.; Oficinas de Control Manvel MA Contrerai, 133 Piso 70, Mexico D.F., Mexico; **Scott F. Nicoll,** 10 San Carlos Ave., Sausalito, Calif. 94965; **Nathaniel O. Robinson,** 14 Juniper Lane, Woodstock, N.Y. 12498; **Kilburn M. Smith,** 6050 S.W. Sixth St., Fort Lauderdale, Fla. 33314; **Hyman J. Verner,** 226 Rittenhouse Square, Philadelphia, Pa. 19103; **Charles F. Woodbury,** 825 Howard Terrace, Winter Haven, Fla. 33880; **Norman T. Allen,** 57 Buzzards Bay Ave., Woods Hole, Mass. 02543; **Kenneth S. Andem,** 2305 Adeline Dr., Burlingame, Calif. 94010; **Arthur R. Belyea,** 95 Maple Ave., Old Saybrook, Conn. 06475; **John E. Burchard,** 1471 Greenwood Terrace, Berkeley, Calif. 94700; **Frederick O. A. Almquist,** 63 Wells Farm Dr., Wethersfield, Conn. 06109; **Warren N. Center,** 8 Maple St., Topsfield, Mass. 01983; **Carl J. Conkey,** Box 2681, Marathorn Shores, Fla. 33052; **James W. Daniels,** R.F.D. #1, Box 203, Grand Prairie, Texas 75050; **Mrs. Winter Dean,** 2157 de la Ribera, La Jolla, Calif. 92307; **Walter Dietz,** Box 2265, Delray Beach, Fla. 33444; **W. Harold Donnelly,** Duffers Lane, Southern Pines, N.C. 28387; **Hugh S. Ferguson,** Barnstable, Mass. 02630; **David Grelick,** 801 East Jasmine Rd., Lehigh Acres, Fla. 33936; **Alberto Lobo-Guerrero,** Carrera 5 No. 66-29, Bogota, Colombia; **Vancourt M. Hare,** 3617 Iskagna Dr. S.W., Knoxville, Tenn. 37919; **Frank M. Hart,** 41 Elm St., Camden, Maine 04843; **Harry Kalker,** 78 South St., Williamstown, Mass. 02167; **Harvey M. King,** 855 Beechwood Dr., Havertown, Pa. 19083; **Oswald J. Kirchner,** Apt. B2, 2200 Speed Ave., Louisville, Ky. 40205; **Bertrand A. Landry,** 3992 Chelton Pl., Columbus, Ohio 43227; **Frederic S. Mann,** Troy Court, Sea St., Wareham, Mass. 02571; **Edward McSweeney,** 205 East 63 St., New York, N.Y. 10021; Dr. **Julius A. Stratton,** The Ford Foundation, 477 Madison Ave., New York, N.Y. 10022; **Philip S. Wadsworth,** 201-208 Congress Bldg., 615 Congress St., Portland, Maine 04101; **Jerome A. Watrous,** 10 Dryads Green, Northampton, Mass. 01060.—**Forrest F. Lange,** Secretary, 1196 Woodbury Ave., Portsmouth, N.H. 03801; **Bertrand A. McKittrick,** Assistant Secretary, 78 Fletcher St., Lowell, Mass. 10852

'24

By now your secretary knows at first hand what so many of you have said about retirement, "It's wonderful!" And also what is meant by never having been busier. The fun of it, though, is that you're only busy at things that appeal to you at the moment. One good piece of advice that has proved most helpful: "Before going to bed at night have one thing all planned to do tomorrow. Of course when you wake if you don't want to do it, that's perfectly OK." And quite often that's the way it goes.

So what are some of our other retirees doing? **Charlie Blake** was one of the first of us to make it. He left the M.I.T. faculty some nine years ago for the town of Hillsboro, N.C. Historically this is a very interesting area, and Charlie has gone into it in his usual thorough manner. He helped form the local historical society, and for two years served as its president. He thinks that eventually the area may become one of the top tourist attractions in the state. But if it interferes with his birding, the bets are that Charlie will move on. He's banding birds at the rate of about 2,000 a year, and if his yard is anything like it was here in Lincoln, it's full of Japanese hair nets, nesting box traps, dripping water traps, and other contraptions for capturing unsuspecting birds. When he begins catching more tourists than birds, that will be it. . . . Completely different is **Russ Ambach**'s retirement, dating only since last August. He started with a trip to the "damp and torrid atmopshere of Florida. I am further securing my chances in the hereafter of heading spaceward. Some effort has been made in this direction as I am now Chairman of the Board of Deacons." This is in addition to the fact that he has also been appointed Administrator of the Harvard Church in Brookline, Mass. It's a new kind of job. It was detailed in a recent Wall Street Journal article, "Churches Hire Business Managers in New Bid for Efficient Administration." Russ is the B.M. at Harvard. . . . **Walt Gress** has retired from so many jobs that probably even he has lost track. In August he wrote: "On final leg of tour that included London, Poland, and Denmark. Met **Rutilio Torres G. Saravia** in London and witnessed the England-Mexico international soccer game with him." Too bad for Ru, but England won, if you remember. . . . **Bill Ridge** retired last February from the Colorado Fuel and Oil Corporation. He had been director of operations of its Eastern Division, formerly the Roebling outfit that built Brooklyn Bridge and many others. Bill lives in Bucks County, Pa., and is in all sorts of local activities including a Nature Center. In June he and Elinore were leaving for a trip to Athens. . . . When **Max Ilfeld** retired from his own business in Taos, N.M., he thought he'd had it. But inactivity palled, and he went to work for the U.S. Forestry Service. Now he's retired from that too. Max and Bertha were East in late summer to visit their son, a Sloan Fellow at M.I.T., and happily, the Kanes. They were not sure at the moment whether they'd be in Mexico or somewhere else this winter. Wherever it is, they'll have fun. . . . A year or two ago **Dick Shea** retired from G.E. and went into consulting on his own. His main problem now is keeping the business down so it doesn't get away from him. He writes on the stationery of John Wiley & Sons, Inc., where he is billed as "Consulting Editor." He probably has other letterheads for his other concerns. . . . **Mal MacNaught** has left the publishing business. He was with McGraw-Hill for years, has now bought a home in New London, N.H., where he is undoubtedly tilling the soil. . . . And **Don Moore** has quit the insurance business but will stay in Pittsburgh. . . . **Bill Correale** had "a drink" with **Ru Torres** and **Walt Gress** in New York before they left for the soccer matches. Among the tidbits he picked up was the fact that **Horacio** (Chile) **Serrano** was on a vacation trip to Japan. It's the first time in all these years that we've heard of Chile leaving his home country. Bill himself is about to retire again, this time after a several-year rewrite job on the New York City building code. He should be done by this time, and after that he had (as of September), no future plans.

Then there are a couple of address changes that certainly look like retirement, although there is nothing else to support it. **J. Reynolds Konold** has moved from Pennsylvania to Dunedin, Fla. And **Earl Messer** has come East from Ohio to North Hampton, N.H. That's snowshovelling country. . . . One more to complete the list, although it's still in the offing. Dr. **Clarke Williams,** Deputy Director of the Brookhaven National Laboratory for some time, is due to retire next year. It was amazing to your Secretary to learn that Brookhaven now has some 3,500 employees.

So much for retirement news. There are plenty of other items of interest, but we can't exhaust a whole summer's accumulation on one column. Next month: **Al Roig** fighting fierce South American marlins, **Sam Shulits** examining Germany's water supply, **Royce Greatwood** and Japan's high-speed trains. Not to mention our Carbon Petroleum Dubbs Professor. A truly international Christmas melange.

Unfortunately the summer also brought some sad news. The deaths of five of our classmates were reported. **Franklin G. Tyzzer,** director of the Riverbank Acoustical Laboratory in Geneva, Ill., died of a heart attack in late May. Frank had been with this laboratory since graduation, becoming director three years ago. . . . **D. Arthur Straight** of East Orange, N.J., died in July. He was formerly personnel director for three major firms, but in 1947 he developed multiple sclerosis. Since then he had conducted a mail business from his home. **Paul Cardinal** represented the class at the funeral. . . . **E. Winthrop Hall** was not with us as a student for long. He also attended Harvard and Columbia. President and general manager of a firm making buffing and polishing machines, he died in July after a long illness. . . . Last May **James H. Bissland, Jr.,** who combined two careers as a

mechanical engineer and nurseryman, died in Turners Falls, Mass. . . . **E. Donald Early** came to M.I.T. from the Naval Academy. He had retired to Venice, Fla., where he died almost a year ago.

Never thought to see the day when an entire column would be taken up by retirements and deaths. Gentlemen, whether you like it or not, we are now of the Older Generation!—**Henry B. Kane,** Secretary, Lincoln Center, Mass. 01773

'25

The new season must be started with concluding notes covering the 1966 Alumni Day activities. The number of classmates present for this occasion was small, but everyone had a most enjoyable time. Present for the various activities, concluding with the Alumni Banquet, were Henry Bacon, Jim Howard, Ed McLaughlin, Sam Spiker, Bob and Grace Hodson, Ed and Adele Kussmaul, as well as your Secretary and his wife Evelyn.

Since the last class notes were written, word has been received concerning the deaths of a number of classmates. Some death notices reached M.I.T. rather belatedly. **Frederick W. Yates,** whose last address was Luray, Va., died several years ago, and the actual date is not known to anyone at the Institute. . . . **Frank R. Harris,** of Perrine, Fla., died in Jenuary 1966, and the information was only recently received by the Alumni Association from a friend. . . . **Leslie G. Green,** of Chichester, N.H., passed away on June 4, 1966. . . . **Phylip H. Carrier** died on July 13 of this year in Pasadena, Calif. . . . And **Theodore A. McEndree** passed away on April 19th in Central City, Neb. Information regarding all of these classmates is extremely sketchy. . . . **Joseph S. Lanigan,** who for years was extremely active in the shoe business, died in Winchester, Mass., on April 20, 1966. Joe was eastern sales manager of the J. Greenebaum Tanning Company for many years and later acted as eastern sales manager for the Hauffman Stafford Company of Chicago, Ill., and the General Split Corporation of Milwaukee, Wis. He was past President and Treasurer of the Boot and Shoe Club, and Director of the New England Shoe and Leather Association. He is survived by his wife, three sons and three daughters, all of Winchester. . . . On June 28, 1966, **Cyrus Hosmer, Jr.,** the production supervisor at the B. F. Goodrich Company rubber plant in Watertown, Mass., died at his home in Belmont. "Cy" joined the Hood Rubber Company immediately following graduation, and this company was later absorbed by Goodrich. He was a widely-known railroad enthusiast and also a director of the Edaville Railroad, the two-foot gauge line in South Carver, Mass.; and he and his family used to help operate this well-known stretch of railroad on Sundays. He is survived by his wife, a daughter living in Westwood, Mass., and a son, Cyrus Hosmer III of Pittsburgh, Pa. . . . **Edward W. Cousins** of Norwood, Mass., passed away on July 14, 1966. Through the kindness of Robert D. Wohler of the Class of 1950, I learned that Ed had been in rather poor health for the last several years but had continued to be quite active up to a few months before his death. He at several times worked on solicitations for the Alumni Fund. At the time of his death he was chief engineer of the research group of the Factory Mutual Insurance Company, with whch he had been employed for 41 years. He was the prime mover in the development of flame throwers, incendiary bombs and special explosives used by the O.S.S. during World War II. He was a member of the technical committee of the National Fire Protection Association, the National Academy of Fire Research, and the Society of Fire Protection Engineers. He leaves his wife, one daughter and one son.

From various sources information has become available concerning retirements during the past several months. **Dick Booth,** who resides in Boonton, N.J., retired on August 1, after spending 41 years with the Bell System. He was Director of program management studies at Bell Telephone Laboratories in Whippany, N.J. He began his Bell System career as a member of the Development and Research Department of the American Telephone and Telegraph Company. From 1925 to 1934 he was active in studies and field work to reduce crosstalk and noise in open-wire lines and paired cables. Joining Bell Laboratories in 1934, he continued studies of cross-induction in coaxial cables and investigated other problems concerning the use of small-size carrier transmission cables. From 1942 to 1945 his wartime activities involved studies and field tests of wire and radio facilities for military use. He was the supervisor of a group in system studies of commercial microwave radio systems from 1946-1951, and later was placed in charge of system studies. He was appointed Director of Special Systems Planning in 1953, and two years later became Director of Molitary Communications Systems Engineering. Among government projects in which he was involved, from a communications standpoint, were the Distant Early Warning Line from the Aleutians to Iceland, the Ballistic Early Warning System, and the Mercury Program of manned space flights. He assumed his present post in 1964. His experience in the communications field has been utilized by the government. He served as a consultant to the Executive Office of the President and to the U. S. State Department, and was technical head of a study group attached to Commander in Chief of the Pacific United Command in Hawaii.

Jim Elliott, in a note to the Alumni Association, indicated his retirement as Sales Trainee Director of the Link Belt Company in Chicago on June 30. He will continue to reside in Wilmette, Ill., and continue to do consulting in his lifetime specialty of material handling. He indicates that he will reserve some of his time for his gun hobby and hunting. . . . **Lynn Wetherill,** Consulting Engineer in the Power Transformer Department at the Pittsfield plant of the General Electric Company, retired on the first of May after 40 years with the company, which he joined immediately following his graduation from Course VI-A in 1926. He started out with the company in Schenectady and went to Pittsfield in 1928. In addition to his busy professional career, Lynn is secretary of the state Board of Registration of Professional Engineers and Land Surveyors for the state of Mass. and is a member of the Technical High School Advisory Committee in Pittsfield. He is also a trustee of the Karl Boyer McEachron Memorial Foundation which provides cash awards for the outstanding seniors in the technical high school program. During his retirement he plans to finish a book on transformer cooling which, according to reports, he started 35 years ago!

Through the Alumni Association headquarters a number of news items have been received. **Paul P. Wiant** notes that he retired some 10 years ago, and for 40 years had been in the Far East as the engineer-architect for the Methodist Church, living on a missionary's salary. Within the past year he has moved to Maitland, Fla., due to the fact that his health does not allow him to stand the long northern winters. Also received through the Alumni Association headquarters were notes from four more classmates. **James Carmichael Evans,** known to us as "Mike" when he was a student, wrote while aboard the U.S.S. Independence out of Hampton Roads, Va., indicating that he was proposing for the M.I.T. Class of 1988 D. Carmichael Evans, born May 4, 1966, in Boston, the son of J. Carmichael Evans, Jr., M.I.T. '62. He noted that M.I.T. is the favorite Alma Mater of Evans, Sr., and Evans, Jr., just as the U.S.S. Independence is their favorite ship. . . . A word from **Hollis Ware** is most welcome, since nearly six years have gone by since he was last heard from. He is now in his eighth year with Federal Electric Corporation, a Division of International Telephone and Telegraph Corporation. Last year he became the supervisor of wage and salary administration with this company. He is living in Midland Park, N.J. . . . **Phil Gruber** writes from Shawnee Mission, Kansas, to say that his son, Phil, Jr., M.I.T. '55, is now located with Avco Research in the Boston area, which will give Phil a real inducement to break away from the Kansas City area for some salt water atmosphere, with a stein on the table! It is hoped he will come East very soon. . . . A short note from **Phil Welch** in Warwick, R.I., indicates that he is working with B.I.F. Industries with one year to go to retirement. . . . A nice note has been received from **"Kamy" Kametani** indicating that after a successful trip to the U.S.A. early this summer, he is back in Japan. Visits from Kamy are always enjoyed by those of us who are fortunate enough to see him. . . . A note from **"Greg" Gregory** indicates that he is recuperating from a mild stroke suffered on May 30 of this year. A quick return to good health is hoped for by all members of the class! . . . **Fred Greer** has not been saying much about his golf of late, although within the past few weeks he was the winner in the second flight of the

Mass. State Senior Golf Tournament. So it appears his golf game is still very good. . . . A note from **Gil Delugach** arrived just too late to make the last issue of The Review. Gil reported that he represented M.I.T. and Dr. Stratton at the inauguration of the new President, Dr. Alexander, of Southwestern College in Memphis, Tennessee. In this capacity he joined in the academic procession with representatives of about 300 other colleges and universities, complete in cap and gown, his first such appearance since 1925. Gil notes that his daughter has moved away from the Boston area to Minneapolis, but it is certainly hoped he can find other excuses for coming this way quite often. . . . **Harrison Browning** has been in the New England area several times in the past few months, giving a hand to M.I.T.'s Instrumentation Laboratory on some of their problems. Last May your Secretary ran into Harrison just outside of Kendall Square; and a note from Ken Brock indicates that Harrison dropped in to a Rotary Club meeting in Dover, N.H., this being photographed. The speaker was none other than **"Chink" Drew!**

Perhaps your secretary has a right to brag a little bit about his family. His Number Two Son, Alden, class of 1962, S.M. 1964, and presently Instructor in the Civil Engineering Department at M.I.T., presented his fond parents with a grandson on July 12, 1966.—**F. L. Foster,** Secretary, Room E19-702, M.I.T., Cambridge, Mass. 02139.

'26

Ruth called while I was in the shower, to tell me that the sun was just breaking through the horizon in back of the breakwater. In September this means it's about 6:15 a.m. Now a couple of hours later, having raised the flag, fed the pup, fed the ducks and breakfasted on pancakes and Vermont Maple Syrup, your Secretary is ready to look at the class notes folder. It's a real fat folder this month, and there is also the reunion folder, which is equal in size. The usual problem of what to say is supplanted with where to begin. If we published a list of those who attended our 40th, it would use all of our space. The hotel did publish a list and if anyone wants a copy we will be pleased to send you one. I have just gone over my copy and find that 90 classmates attended and all but 23 brought wives. This makes a count of 157 and does not include several who came for Alumni Day but could not make the reunion. (Such as, Mr. and Mrs. **Eben Haskell.** Eben was shot down by a labor problem at his company over the weekend.) From the feedback, it seems to have been one of our most successful reunions. The weather was good; the Hotel Belmont worked out so well that Reunion Chairman **Don Cunningham** has nailed it down for our 45th, after conferring with the committee by telephone. Don organized the reunion beautifully and let's take time out to give him the big pat on the back he deserves and although Don would bow to his committee, as a perpetual member of the Reunion Committee, your Secretary knows that it takes a good chairman to make things work. The rest of the committee, **Bill Meehan, Bob Dawes, Jack Larkin** and **"Pink" Salmon,** all did their jobs well under Don's direction, and thanks to all of them.

The reunion's outstanding feature was the opportunity to get together for a few days—many coming for the first time. **Shantanu Kirloskar** and his charming wife made the longest trip, coming all the way from India. I had been reading of his marvelous record as an industrialist in India, and had seen his picture in Time and Fortune Magazines. Until I saw him in the flesh, I didn't remember him but it came back fast enough. In the dormitories he was known as the prankster in '93—always ready for a venture of fun. It was difficult to envision him so dignified and I so remarked to him several times during the reunion. His reply was simple, "Forty years." Had the Kirloskars not walked off with the long distance honors, **Frank Strickland** and his wife from Seattle would have been measuring mileage with **Arthur Fuller** from San Diego, to see who had come the greater distance. They would have had competition, however, from **Bill Hoar,** who came from Viet Nam, where he has been for the past couple of years as a design engineer located in Saigon. **Guy Frisbie,** in addition to Mrs. Frisbie, brought his daughter, Martha, who is living in Boston. **Ted Mangelsdorf** brought Mrs. Mangelsdorf over from Woods Hole on Saturday afternoon, and many of us had the pleasure of meeting her. One of the features of the reunion was the **Shepard-Mancha** duet—a little shorter than usual because their repertoire is somewhat smaller, but just as good as ever. Another feature was **Jim Killian's** cocktail party at the beach house on Sunday—an ideal spot for it and an ideal day for it, and your Secretary shamefully must admit that he missed it—not because he overslept; but on Sunday morning, we went looking for a pup to live in Heidi's dog house and after Cape Ann, I always underestimate distance on Cape Cod. We did not buy the pup, and we did get back in time for the Clambake, which was handled very nicely and with the beach house facility, did not even include the usual sand one has to eat at a clam bake.

These affairs were all wonderful, but the outstanding event of the whole reunion was the presentation and acceptance of the James and Elizabeth Killian professorship. When we arrived at the Belmont, **Austin Kelly** was sweating—he was within a few thousand dollars of our goal and attainment was assured. However, Austin wanted to reach it by Saturday night and as you might expect, Austin was on the long distance phone all Saturday morning. And, as you also would expect, the phone calls to loyal '26 men worked and the goal was reached by noon on Saturday. I have talked with Austin several times since reunion and he has been greatly concerned that he may have lost most of the friends he had in the class of '26. I assured Austin that he had won the esteem and friendship of all of the Class of '26, because of his remarkable achievement. How many of us wish we had Austin's ability to ask a man to lunch, tap him for $25,000—and get it! Those whom he tapped and from whom he didn't get it could not help feel that the class had a dedicated man in Austin, who was willing to take on such a job and see it through. Our hats are all off to him. The presentation on Saturday evening also featured Class President **Dave Shepard** and **Bird Kelly** was Toastmaster. Bird is a pro—there is no denying—he had us all on the edges of our chairs. Dave's dignity and poise were made for the occasion. I have heard Jim make a great many speeches, but none have equalled his acceptance. It has been my observation that when Jim talks to a large audience, you feel as though he were talking to a small group in his study. In accepting the James and Elizabeth Killian professorship, it was as though he spoke to you personally. Jim and Liz were touched with this honor bestowed upon them by the Class, and the Class was equally moved by his acceptance. It will go down as one of the outstanding accomplishments of the Class of '26. It was a memorable occasion. I heard that someone had recorded the speeches, but I had no idea who. In mid-August I was pleased to receive a package from **Eliot Bidwell,** containing the tapes. I have not acquired a tape recorder but expect to shortly. Meanwhile a friend is bringing one over so we can hear the talks once again. I'm looking forward to it.

As for the Sunday evening at Pigeon Cove, it was a memorable occasion for Ruth and me. Kay Shepard had the marvelous idea of chartering buses and when three Greyhound buses deposited the Class of '26 at the end of our driveway, it appeared as though a tidal wave was sweeping down the drive, lead by a tall David. We had large punch bowls on the upper terrace and in Ruth's Plant Room. When the Class hit that Fish House Punch, I would have sworn that the Kirloskar I knew in the Dorms had sneaked in and drilled holes in the punch bowls. From then on I shuttled between punch bowls, keeping the level high. I had doubled the recommended quantity, knowing the Class of '26, but I still underestimated and about 9:15 when I was going to have to start filling the bowls with bourbon, **George Leness** was heard to say, "Don't you think we should call the buses?" Again, like a receding tidal wave the Class of '26 was off into the night. Our Transportation Chairman, **Bob Dawes,** came back to check that no one was left behind, and I remarked that it sounded as though the buses were starting. "Oh no," said the Transportation Chairman, "They will not leave without me." But they did! We had a special police officer to handle the traffic, so he called Headquarters, who in turn radioed a patrol car which flagged one of the buses, and our Transportation Chairman was picked up. Bob will be living this down as long as there is a Class of '26, but he takes a riding graciously. He did a fine job on transportation for the Class, even though he didn't do too well for himself. We will have more to report on the reunion, but have used up this month's space. A Happy Thanksgiving to all. It

will be our first in Pigeon Cove, and we will be thinking of all of you. Cheerio until December!—**George W. Smith,** Secretary, Pigeon Cove, Massachusetts.

'27

News of several deaths has unhappily been received over the summer months. Last April **Frank Marcucella** was at the 1927 table at an Alumni Council dinner meeting. There was word of his receiving a doctor of science degree from Franklin Pierce College. A picture which I received later showed him receiving the degree in the same robe he wore at graduation from M.I.T. Frank was seriously ill at the time and died July 11. He is survived by his wife, a son, a daughter and six grandchildren. Frank was born in Italy and came to this country as a child. Trained as a civil engineer, he first worked on construction projects at West Point. He joined Volpe Construction Company in 1942 as job superintendent and succeeded Gov. Volpe of Mass. as president in 1961. Gov. Volpe was at his bedside when he died. Frank was trustee and member of many charitable organizations and engineering societies, a commander in the Civil Engineer Corps, U. S. Naval Reserve, during World War II, a member of the Ancient and Honorable Artillery Company, and an Elk. He established scholarship funds at M.I.T., Tufts, Northeastern and Brandeis Universities. Truly a full and accomplished life.

Very belated word of the death of **Albert A. Peer** on November 23, 1962, has been received. Until 1959 he was with Esso Standard Oil Company in Texas and N. J. He then became industrial engineering consultant to Irving Oil Company, Ltd. of St. Johns, New Brunswick. He died at his home in Lancaster, New Brunswick. His special field was lubricant, wax and asphalt manufacture. . . . **Victor H. Schueg,** a former vice-president and director of the Bacardi Company of Cuba, died May 7, 1966. He had resided in San Juan, Puerto Rico, since 1960, when the Castro government seized the company's assets. . . . **Charles G. Halpine** died in Annapolis, Md., where to our latest knowledge he was superintendent of buildings and grounds for seven state buildings including the capitol. He was a retired U. S. Navy (aviation) Captain and had been commodore of the Annapolis Yacht Club and vice-president of the Maryland Bay Soil and Fertilizer Company. His book, "A Mariner's Meteorology," is used at the U. S. Naval Academy. . . . **John H. Wilson,** who died in Sewickley, Pa., had been the manager of the Salem China Company of Salem, Ohio. . . . Dr. **Constantine S. Stephano,** Executive Vice-president of Stephano Bros. Inc. of Philadelphia, Penn., died in September 1965. . . . **Leslie O. Patten** died in Stoneham, Mass. on March 27, 1966. . . . **Lee E. Hildebrand** died December 23, 1965, in Marblehead, Mass. . . . **John R. Hooper** of J. R. Hooper Company of Brookfield, Ill., died January 15, 1966. . . . Your Secretary regrets that in so many cases the class files contain no additional information concerning classmates who have died. Perhaps some of you who are reading this can contribute information about the lives and careers of these men.

According to a letter from **Charlton Whittier, Ralph Johnson** has had to resign his position as President of the Hawaiian Electric Company following a serious operation. It is sad indeed to see Ralph's successful and useful career with Hawaiian Electric come to an end. . . . News of **Jim Lyles** continues good. He is all established on a year-round basis at Canaan, Conn. In fact, I will see him and Molly tomorrow when they come to visit a cousin of Jim's here in Mystic. . . . There have been two outstanding promotions which I will have to handle alphabetically. **Bill Taggart** has been appointed president of Dewey and Almy Chemical Division of W. R. Grace and Company. This has been a lifetime career for Bill. He became Vice-president of manufacturing in 1948, Executive Vice-president in 1956. He will be in charge of the company's eight divisions and his headquarters will remain in Cambridge. . . . **Russ Westerhoff,** President of Ford, Bacon and Davis, Inc. has been elected to the additional posts of chairman and chief executive officer. Russ joined FB & D in 1928, was named Vice-president of operations in 1961 and President last year. On the home front, Russ reports that his son is a patent attorney for Westinghouse in Pittsburgh; his daughter is at Columbia University. Russ also records a strong intention to attend our Reunion (q.v.).

Pub Whittier is another who expresses the hope to see us all at the Reunion. His present spot is manager of customer packaging services for Owens-Illinois Inc.'s Glass Container Division. He is the recent recipient of the "Outstanding Contribution to Packaging Education" Award of Michigan State University for "solving technical problems relating to the preservation and shelf-life of products packaged in glass." . . . **Frank Connolly,** who moved from New Jersey to San Clemente in 1959 says, "Am with Warner Bros. not picking starlets; instead am deciding on CATV sites, supervising installations, etc., in this rapidly growing industry." . . . I got a chuckle out of hearing from **Chet English** who says he got the message I sent him in these Notes that I wanted to know why his address had changed to Florida. He writes, "After living in the snow-belt suburbs of Cleveland, we wanted to get away from the white stuff, so here we are. After 20-plus inches of rain we had here in Fort Lauderdale in June, I'm beginning to wonder. However, it's been nice overall since being here. One thing does seem funny though—as an early retiree I feel like a young squirt among all the white-thatches here." . . . The peripatetic Dr. **Edgerton** has co-authored an article in Science Magazine entitled "Monaco: The Shallow Continental Shelf." . . . **Ethel Woolfenden** continues to keep me up-to-date on **Les.** This time he really couldn't do it himself. He had his spleen removed plus gall bladder and stones, and now sports a scar in the shape of an anchor. Les is feeling fine now minus 30 pounds, and looking accordingly younger, and able to lift a large steak onto the hibachi. . . . **Eddie Cahill** also got the signal in the May notes that we wanted to know why he moved back to St. Louis, his old home town. It turns out that Eddie worked for Skelly Oil for 17 years and then went into geological consulting work in Evansville, Ind., concentrating on exploratory drilling, until at 65 he found the rigors of well drilling "more of a chore than the joy they had always been." So now he is doing some work for old clients but mainly devoting himself to his life-long hobby, "the pursuit of knowledge connected with the archaeology of Mound-Builder culture in the Mississippi Valley. Great Cahokia is just across the river in Illinois. It is one of the largest artificial earthen structures in the world and apparently was the ceremonial center of a pre-Columbian Indian civilization that extended throughout the Mississippi River and tributaries." . . . **Art Connolly,** a lawyer by profession, has been working for Lockheed-California in Burbank, Calif., for the past two years. . . . **Maurice Barrangon** is executive editor of Mechanical Engineering magazine, the official publication of ASME. . . . French Polynesia gets a big boost from **Ed Damon** after a cruise which took him there. The postcard says that it is the last paradise on earth, and it looks it. . . . "My lot continues to be that of a commuter," says a welcome letter from **John Drisko.** "I have been with the firm of Tippetts-Abbett-McCarthy-Stratton, New York consulting civil engineers for 12 years. We do a lot of foreign work, and much of my time has been on things related to Pakistan. For six years I was technical adviser to a World Bank team, hammering out a treaty between India and Pakistan regarding the waters of the Indus River system. More recently I have been working on the planning and design of a very large earth and rock fill dam in Pakistan." The letter was written from 29 Hickory Drive, Maplewood, N. J. Intriguing sounding work.

Colonel **Robert Connor** retired from the Army in 1957 and lives at 1305 Round Hill Rd., Fairfield, Conn. He reports "my academic interests are served by living almost on the campus of Fairfield University and by alumni activities at the University of Bridgeport where I took a master's degree in education in 1959." . . . **Edward D. Stone** has been commissioned to design five government buildings in Islamabad, the new capital of Pakistan. . . . **Ted Tedford,** after a long career with Butler Brothers, is now retired. He reports a good recovery from major surgery last fall but that he doesn't like retirement and wants to get back "in action." He is still living in Baltimore. . . . Further to **Frank Staples'** installation as Grand Master of Masons in New York State, a letter tells of a trip this past summer to much of the West Coast, in line with this new responsibility, and plans for meetings in England next summer. Despite this, he is shooting for the Reunion. . . . A cheery note from **Paul Vaughan,** "Still rocking along making the 'best damn diesel engine.' Like what I am doing but due to retire in 1970. What

then?" Well, Paul, I wouldn't worry until 1969. Paul also points out that his Alco Products is now a wholly owned subsidiary of Worthington. . . . **Parke Hodges** resigned as a director of Compagnie des Potasses du Congo "to reduce foreign travel," but he has turned up as busy as ever with trips to Greece, Liberia, Central America and Canada on the docket. . . . Last May, **Morris Leonard** advised that he was "about ready" to retire from Leonard's Department Store, Fields Corner, Dorchester, Mass., of which he is the owner, to devote more time to the stock market (his hobby). I just hope that he made it in time. . . . **Randy Petersen** has retired from Raymond Concrete Pile, still living in Baltimore.

Will the following 1927ers "on the move" please follow the good example of Cahill and English (see above) and write me about the reasons for the new locations: **Eldred W. Bemis** from Huntington, Ind., to c/o H. K. Porter Inc., Whitehead Rd., Trenton, N. J.; **William F. Bingham** from Wichita, Kans., to 1835 SE 22nd Place, Portland, Ore. 99214; **Bradford R. Stetson** from St. Louis to 850 Northstar Center, Minneapolis, Minn. 55402; **Edward A. Leach** from Springfield, Ill., to 530 Bennington Terrace, Ridgewood, N. J.; **Allan T. Gifford** from Paseo, Wash. to Lowell Technological Inst., Lowell, Mass. 01854; Dr. **Royal Weller** from Sunnyvale, Calif., to c/o David Catlin, 7 Brook Hollow Rd., Pittsford, N. Y. 14534?

Here are the members of 1927 who attended Alumni Day this year: Dike Arnold, John Boyle, Ed Chase, Bob Dexter, Harold Edgerton, Harold Fisher, Dick Hawkins, Hector Moineau, Miss Sara Scudder, Ezra Stevens, Bill Taggart, Kenneth Vint, John Vinti.

The latest figure I have on the Class Reunion gift is $259,000 out of our goal of $500,000 and less than a year to go. **Bud Fisher** says we can make it if every last one of us will stand up and be counted. If you believe in the importance and influence of M.I.T. send in the biggest gift you can—or increase what you have already given. And plan to come to the Reunion. The Chairman, **Bob Bonnar,** who will do all the hard preparatory work, has been up to the Bald Peak Colony Club at Wolfeboro, N. H., and reports that it is superlative. All you have to do is show up and enjoy yourself. The dates are June 9, 10, 11, 1967. Wives will be welcome.

Jim Lyles wanted me to include the following note: "Just had a drink with **Joe** and Ann **Harris** at Masons Island and congratulate Joe on his voluminous notes. Was distressed to bring the sad news that **Ralph Johnson** died last week after a short illness. Have seen **Ray** and Zella **Hibbert** recently and hope to see them for our annual Thanksgiving reunion of Hibbert and Lyles. Molly and I intend to be with you all in June '67 at Bald Peak. Pack up your troubles in your old kit bag and join us! P.S. A card from **Glen Jackson** in Iran says he placed ninth in a weight-lifting contest. Do you believe it?"—**Joseph S. Harris,** Secretary, Masons Island, Mystic, Conn. 06355

'28

Half of the hodgepodge that follows has been accumulating in my desk since last May, when we completed our class notes for the July issue. On this day, September 12, we find it difficult to get back into harness after an easy summer. Maybe we can get back into the swing by reporting the attendance at the Alumni Officers' Conference last Friday and Saturday. We spoke with **Jim Donovan, Bill Carlisle, Carroll Smith, Bob Foster, Tom Harvey, Rudy Slayter, Art Nichols, Maurie Klegerman, Bob Harris** and, of course, most important **Florence Jope.** Some of these were at the boathouse dedication on Friday. We were particularly happy to observe that Bill Carlisle and Art Nichols had both recovered quite handsomely from their hospital sieges of last June. Which reminds us that Art Nichols was recently elected a new corporation member of Northeastern University. It was announced at the Alumni Officers' Conference that several members of our class had been awarded "certificates of appreciation" because of outstanding work in the 1966 Alumni Fund. **Homer Burnell** in Chicago and **Arnold Archibald** in Pittsburgh were listed with the outstanding special gifts chairman; **Carney Goldberg** as an outstanding "special gifts class chairman;" **James Morse** of San Mateo County, Calif., received a prize as an outstanding regional chairman along with **Newton S. Foster** of Nutley, N. J.

While thinking of fund raising, we were reminded that **Jim Donovan,** general chairman of our 40th reunion, with **Abe Woolf**, reunion chairman, and **Herm Swartz,** Class Secretary, attended a delightful lunch at the home of Florence Jope late in August. Among other things related to the reunion, the group planned a dinner to be held at the Faculty Club in Cambridge on September 26. Classmates will pay their own checks but wives are to be guests of Artisan Industries, Inc. This will be another general planning session for the reunion; and if any of you laggards and lazy lunkheads who refused to do any work for the class think that reunions take care of themselves, you ought to be present at this Cambridge dinner, where the air will certainly turn blue with heated discussion of plans.

Now for the wheat and chaff that is supposed to comprise class notes: We note that **C. H. Topping** of E. I. duPont de Nemours and Company was recently elected treasurer of the Producers' Council, a national organization of manufacturers of quality building products. Chuck is development manager for building products of the duPont Company. He is a past member of the Building Research Advisory Board, past president of the Building Research Institute, and has served as director of the Producers' Council and a member of the executive committee. He is also co-chairman of the East Coast Task Force of the NAHB-PC Joint Committee. . . . A note from the Alumni office tells us that **Fred Switzer** has had a recent change of address: Largo Oil and Transport Company, Aruba, Netherlands Antillies. . . . And a news clip dated May 21, which some might consider as ancient history, tells the world that **Richard Wilhite** was at that time elected to the presidency of the Orange and Rockland Utilities, Inc. in Nyack, N. Y. . . . A letter to the Alumni office from **James Green,** Vice-president of the Northern Trust Company, Chicago, blasts the circulation department for confusing his address with that of James D. Green, Jr., Class of 1965, of Corning, N. Y. He adds, "As to news for the Class Secretary, it might be interesting to know that after having been a widower for 15 years, I was married again on March 31, 1966 to Miss Pearl E. Schaefer. The wedding took place at the Fourth Presbyterian Church of Chicago, and we spent our honeymoon in Jamaica." As Secretary I cast one ballot congratulating Jim Green and wishing him and his bride great happiness. . . . From **Elwood R. Anderson** we learned that effective July 1 his new address is Patrician Apts., South Foster Drive and Clayeut Rd., Baton Rouge, La. Elwood also tells us that his twin daughters, Mary and Nancy, entered Goucher College in September. We regret to report that his wife died August 27, 1965. . . . **Fred C. Meltzer,** 8927 74th Ave., Glendale, N. Y., reports that he is now board economist with the United Nations at San Salvador, El Salvador, Central America. . . . From **Sam Weibel,** 3248 Glengyle Ave., Cincinnati, Ohio, a report that he was co-author "1965 Best Paper Award." His winning paper was entitled "Impondement Influences on Water Quality" by Symons, Weibel and Robeck from American Water Works Association, Resources Division, published in AWWA journal in January 1965. Sam is deputy chief, Engineering Activities, R. A. Taft Sanitary Engineering Center, Cincinnati, Ohio. . . . And **Art Robinson** of Delmar, N. Y., reports that he is now a consultant to the National Commercial Bank and Trust Company, Albany, N. Y. His principal work is concerned with asphalt paving contracts and contractors in upstate New York. From our experience in construction we must comment that Art must get up very early in the morning to keep track of those contractors. . . . And **Fred Walden,** 77 Peaceable St., Ridgefield, Conn., reports that he is retired but doing a little consulting work. However, not enough to interfere with fishing. He adds that he and his wife are planning a slow boat trip around the world, starting in October or November, and this bit of news must bring tears of envy to many classmates. . . . A note informs us that **Julian W. Hill,** one of the inventors of nylon, received an honorary Doctor of Science degree from Kenyon College in Ohio during graduation exercises on May 30. Our friend retired from duPont in 1964.

On Alumni Day last June 10 members of our class, several with their wives, attended the exercises and luncheon. Also present was Florence Jope, who had earlier attended the memorial exercises for those who had departed this past year: Carl J. Bernhardt, Hamburg, N. Y.; Joseph M. Hagerty, Bessemer, Ala.; Eric Hartmann, Milton, Mass.; Robert J. O'-

Donnell, Medway, Mass.; Walter K. Oser, E. Orange, N. J.; George W. Rigby, Boston, Mass.; Samuel J. Shure, St. Louis, Mo.; and Samuel B. Smith, New York City.

Jim Donovan is our class ambassador plenipotentiary and fortunately he looks up members of the class and reports these informal meetings to your Secretary. This adds news value and quality to these class notes, as you all must agree. On June 2 he "dropped in" on **Homer Burnell,** Vice-president of the Continental Illinois Bank and Trust Company. Homer helped him and invited him to an excellent and delightful lunch. On June 6 he wrote, "On a Florida business trip my wife and I took a bit of extra time and went down the Keys and visited with good old **Charlie Richheimer.** Charlie has a wonderful set-up, a house that looks out over the Gulf, a large power boat, and a relatively smaller boat for fishing in the Florida Bay. Charlie gave us a ride out into the Bay to see the pelican rookeries. . . . Later we met Trudy and **Don Francis** and drove to Sanibel Island, where the girls enjoyed themselves picking up shells, while Don and I sat under a tree looking out over the Gulf and talking quietly and pleasantly. Trudy and Don have been over to the Bahama Islands in their power boat but had more luck fishing off their own home port of Delray Beach. We naturally talked 40th reunion and class gift. Trudy suggested an idea which is likely to show up at our 40th." . . . On June 27 Jim received a telephone call from **Jerry MacGillivray** while he was on a visit to Boston. Naturally Jim mentioned golf and Jerry replied that he had just "shot his age" in a tournament, thereby adding a camera to his collection. Jerry has three married children—not children any longer—and one is a teacher over in Japan. Jerry also is looking forward to the reunion in 1968.

On June 14, Alumni Day, Jim reports that he had much favorable comment on **Bud Gray**'s presentation to the Joint Economic Committee, a copy of which had been sent out to every member of our class. He also received a letter from **Charlie Campbell,** who is northeastern regional manager for the International Paper Company, Manchester, N. H., which requested copies for some of his friends. Also on Alumni Day Jim had the pleasure of talking for a while with **Max Bearon**. Max said he had been in Houston, where **Bill Hurst** had entertained him and **Bill Woods** at dinner. . . . We expect an odyssey of Jim's travels during July, August and September for our next report.

With the deepest regret we report the death of **Charles W. Rogers,** 61, a partner in Designs Unlimited, Inc. of St. Petersburg, Fla.—**Hermon S. Swartz,** Secretary, Construction Publishing Company, Inc., 27 Muzzey St., Lexington, Mass. 02173

'29

We are just back from a fine weekend at M.I.T. where we attended the Alumni Seminar, which was a great success. It was enlarged from the previous three years and dealt with expanding demands of education and what could best be suggested and done to meet the needs—many competent people working in the field both here and abroad. Other 29'ers attending included the **Tom Spellers**, the **Virgil McDaniels** and **Wally Gale.**

A few miscellaneous items bring us up to date after the summer season, which went by all too quickly for most of us I'm sure. Class Day at M.I.T. June 13 was enjoyed by the following from our class who were registered: Mr. and Mrs. Bill Baumrucker, Mr. and Mrs. Paul Donahue, Mr. and Mrs. Virgil McDaniel, Mr. and Mrs. Frank Mead, and Clarence Worthen, Jr. We were sorry to miss Class Day this year as we really look forward to it but last minute business commitments prevented attending. . . . We had notice that the M.I.T. Club of New Hampshire held its annual dinner meeting May 26 at the Wayfarer in Manchester. Guest speaker was Dr. Igor L. Paul who spoke on "1980's: Instant Travel," after which a short movie was shown entitled "A Student's Eye View of M.I.T."

Arthur Marsh dropped in to see me at the office on June 28 and there emerged (not necessarily in the order of importance) that he had always wished that he could have taken Aeronautics in school; that now he has logged 4600 hours as a private flyer, that he has "grown with the aircraft industry" in the field of adhesives, caulking compounds, and plastic foaming; and that he now has a new hobby venture "Aerospace Nylok" making screws the size of super bolts down to those in eyeglasses—all with nylon inserts to stop the screws from coming out. His visit was most enjoyable and appreciated. . . . **Henry Robbins** wrote us way before the summer season of his doings in the New York Audio Society together with a copy of the Newsletter. We feel sure that 83% of the class participate in a greater or lesser extent but from all the evidences of the communication, this is in the "greater extent"—even the terminology reaches beyond the comprehension of the uninitiated. . . . Back in the May issue we slipped up in reporting about **Hunter Rouse** as Dean of the College of Engineering at Iowa State; actually, he is at the University of Iowa. Hunter kindly called our attention to this and asked, "Please bring me back from Iowa State which is even farther from The University of Iowa than Harvard is from M.I.T. Besides, they have their own dean." Apologies from your reporter!

It was indeed very good news to hear that as of May 1966 **Ted Malmstrom** had started his third month back at work (8 hrs. per day) after being off since his accident December 21, 1964. Ted sends regards to all, classes of '28 thru '31. . . . Newsclippings bring news of **Sam Levine,** residing in Swampscott, who has been promoted to an executive position at the Flight Propulsion Division of General Electric Company in Lynn where he is now manager of evaluation engineering and test operations. He was formerly manager of the Aircraft Nuclear Propulsion Division's Idaho test station. He has been with GE's Advanced Engineering program since 1930. . . . From Florham Park, N. J., we have word that **Arthur Scott** recently celebrated his 30th anniversary of service with Esso Research and Engineering Company, with which he has been associated since 1936. His present assignment is on the development and extension of basic physical and thermodynamic properties information for use in the Esso Blue Books. Arthur is a member of the American Petroleum Institute's Subcommittee on Technical Data and chairman of its Advisory Committee for a Critical Properties Experimental Project.

Also, congratulations to **George Meyers,** who has been elected treasurer of Nuclide Corporation, State College, Penn. He was formerly associated with General Electric Company for 17 years, where he was involved in the development of America's first jet engines. . . . We were much saddened to hear of the passing of **Richard Sawyer** on May 30. Richard was president of Firestone Textiles Company, a division of Firestone Tire and Rubber Company in Akron, Ohio. . . . Now that we are back in the swing of another season of class news reporting, may I send out another plea for material about the Class of '29. What's new with you? Best regards.—**John P. Rich,** Secretary, P. O. Box 503, Nashua, N. H. 03060

'30

At this time of year (September) almost six months have elapsed since the last '30 Notes were prepared, and hence there are a number of items to be reported that might perhaps be more accurately characterized as ancient history rather than news. Among these items are communications from two U. S. patent examiners, **Jack Bloom** and **Bill Wye.** Jack reports that he has retired from the Patent Office and is living in Bonita Springs, Fla. He has continued his interest in amateur radio (call letters W3AOF) and says one of his hobbies is "fighting City Hall," but does not indicate what he is fighting about. Bill Wye's letter reports that as of September '65 **Jim George** was slated to retire from the Navy Department, Bureau of Weapons in December. Jim plans to teach mathematics at a junior college in Maryland and write a book on mathematics for engineers. . . . Still another retiree is Col. **Harold Conway** of McLean, Va., who graduated from West Point in '21 and received a B.S. in M.E. with our class in '30. Col. Conway retired from the Army in '54 to accept a position as Washington representative for research and development firms. He retired a second time in '65 and is now working toward a masters degree in Latin American Affairs at Georgetown's School of Foreign Service. After his first wife died he married Mrs. Margarita Willingham, widow of Admiral Willingham, U.S.N.A. '26, and thereby became "an instant stepfather (twice) and an instant grandfather (twice)." He reports having recently seen Col. **Myron Leedy** who was his classmate at both West Point and M.I.T. . . . **Bob Cook** is director of engineering of Virginia Metal Products, manufacturer of movable par-

titions for commercial and institutional buildings and bookstacks for libraries. He reports that he is still looking for a home for his Materials Information System (see February '64 Notes), which has been his principal extra-curricular activity for many years. . . . Many thanks to the two classmates, **Dave Landen** and **Ed Hill,** who took the trouble to fill in the "News for your Class Secretary" space in the recent Alumni Register mailing. Dave noted that he has been elected President, Potomac Region of the American Society of Photogrammetry for '66-'67. Ed is deputy coroner of Cuyahoga County, Ohio, and a retired colonel U.S.A.R., M.C. His two sons are at Western Reserve University, Ed Jr. in the Law School, and Andrew in the Business School. Daughter Susan graduated from Vermont College last June. At the time he wrote his note, Ed had been in the Sunny Acres Hospital in Warrensville for several months. Best wishes for a speedy recovery, Ed. . . . **Bob Armstrong** has been appointed Senior Vice-president of Celanese Corporation. . . . **Sidney Kaye** received an honorary Doctor of Humanities from Calvin Coolidge College last June "in recognition of 25 years of service to improve the health standards of the people of Boston." . . . **Willard Paine** has been nominated for for election to the Board of Directors of the Union Commercial Bank of Elyria, Ohio. . . . It is regretfully necessary to report the death of two more of our classmates, **Leslie Berman** and **Dick Jackson,** both in May '66. Les had been with S.C. Johnson and Company (Johnson's Wax) for 25 years. In September '64 he moved from Boston, where he had been district sales manager, to the home office in Racine to work on a national project to revamp sales coverage. He is survived by his wife Gertrude and a daughter, Mrs. Maxine Kaufman, who as of November '65 was on the editorial staff of Glamour Magazine in New York. . . . At the time of his death Dick was assistant comptroller of Kodak's Apparatus and Optical Division in Rochester. After graduating with our class in '30, Dick received a master's degree at M.I.T. and then went to Harvard Business School. From '31 to '33 he worked as an investment counsellor with a Boston firm and then joined Kodak in '34. He is survived by his wife Constance, a son Richard, Jr., and a daughter Susan. . . . Change of address: Professor **J. Palmer Boggs,** Dept. of Architecture, University of Arkansas, Fayetteville, Ark. 72701; Col. **Harold J. Conway,** 1718 Forrest Lane, McLean, Va. 22101; **Trevor K. Cramer,** Ingress-Plastene Corp., 1001 E. College St., Crawfordsville, Ind. 47933; **Henry J. Fekas,** 14 Luanita Lane, Newport News, Va. 23606; **Robert A. Foster,** R.F.D. 7, West Parish Rd., Penacook, N.H. 03303; **Howard S. Gardner,** 5743 N.E. 56th St., Seattle, Wash. 98105—**Gordon K. Lister,** Secretary, 530 Fifth Avenue, New York, N.Y. 10036

'31

I hope all of you had a very pleasant and enjoyable summer. **Ken Germeshausen** and his Reunion Committee did a splendid job, as all of you who attended the Reunion know. Those present included Evelyn and Marshall Andelman, Dick Ashenden, Madelon and Dick Baltzer, Henry Baratta with his wife and son, Janet and Larry Barnard (who had to leave early to attend the graduation of their son from Dartmouth), Hope and Randy Binner, Phil Bonnet, Mildred and Wyman Boynton, Jean and Gordon Brown, Lorna and Myron Burr, Rosamond and Maddie Cannon, Edith and Ken Clark, Jerry Cook. Catherine and Gabe Cristofalo Laura and Fred Damiano, Beatrice and Hal Davis, Helen and Ralph Davis. Marion and Art Donovan, Fantine and Irv Finberg, Pauline and Ken Germeshausen, Sylvia and Dave Goodman, Helena and Jack Gordon, Mary and Leo Green, Ella and Emile Grenier, Adeline and Don Grieco, Margaret and Clem Hamblet, Harry and Chan Hamlin, Jr., Constance and Hank Hartwell, Virginia and Helge Holst, Charlotte and Ed Hubbard, Ruth and Bill Jacobs, Naomi, Linda and Dan Johnson, Barbara and Stu Knapp, Mrs. and Tom Knox, Marion and Otto Kohler and their daughter Carol, Marjorie and Dick Kropf with their sons Dana and Chris, Bert and Jack Lane, Jean and Claude Machen, Violet and By Martin, Jeanette and "Mac" McKenzie, Mildred and Art Newell, Flo and Ed Norris, Laura and John Olsen. Annelotte and Horst Orbanowski, Mrs. and Myrle Perkins, Loretta and Enio Persion, Alice and Russ Pierce.

Evelyn and Howie Richardson, Frannie and Gil Roddy, Emily and Bob Sanders, Harriet and Shel Smith, Nan and Ken Snowdon, Clare and Ben Steverman, Virginia and Bill Stewart, Peggy and Ben Stott, Louise and John Swanton. Kay and Cliff Walker, Doris and Jack Weprin, Harriet and Mike White, John Hutchins, and Louise and yours truly. (If anyone has been left out, please drop me a note and I'll correct it in the next Class Notes.)

The weather was good most of the time, but the water was cold. (A few souls, such as **John Olsen, Ben Steverman** and **Ken Newell** even went swimming.) The following Class Officers were elected: **Howard L. Richardson,** President; **Claude F. Machen,** Vice-president; **William H. Jacobs,** Treasurer; **Edward B. Hubbard** and **Ralph H. Davis,** Special Gifts Co-chairmen, and yours truly as Secretary. After the Reunion most of the group went on to Cambridge and Alumni Day. Although **Elliot Whitaker** wasn't able to attend the Reunion, Ken Germeshausen received the following letter from him bringing us up to date: "Reluctantly, I must advise you that I shall be unable to attend the reunion, which I was looking forward to with much enthusiasm. Our youngest, Philip, who graduates this June 14 from Ohio State just announced his plans to be married on June 15. You know the rest. About our offspring—our oldest, Craig, who completed work for a degree in architecture at Yale this past year is now an active participant in the Peace Corps in Mindinao, Philippines. Our second, Susan, is married and living in Portsmouth, Ohio. Meanwhile, the third, Philip, will continue his studies in Law at the Ohio State University this fall. Doris and I welcome the new state of affairs when all three will have completed their formal academics. I am still here in Columbus, Ohio, as Director of the School of Architecture at Ohio State. With some family still in evidence around Boston we manage to look in on the Boston-Cambridge scene about once a year. When you drive over the two highway bridges at Bourne and Sagamore enroute to Wianno say hello for me. I worked as a labor foreman on the concrete parts of the bridges just after completing M.I.T. Give our fondest regards to our many friends of 1931 and I hope you have a wonderful Reunion."

A note from **Tin Rucker** says that he married Mrs. Lorol Bowron Rediker on April 7, 1966, in Birmingham, Ala. She is Wellesley 1933. . . . **Sterling Wyckoff** reports that he is assistant professor of math and treasurer at Belknap College, Center Harbor, N.H. . . . It was indeed a pleasure to learn that **Ralph H. Davis** has been appointed as Executive Vice President of Fairfield and Ellis, Inc. . . . A recent publicity release from The University of Oklahoma reports that **Dick Huntington** is now research professor emeritus of chemical engineering, a title he received when he retired on May 31 from the University of Oklahoma faculty.

Emilio Collado has been elected Executive Vice-president of Standard Oil Company (New Jersey)—congratulations! . . . **Larry Stauder** was the commencement speaker at the Witt High School from which he graduated in 1925. Larry is chairman of the Department of Electrical Engineering at the University of Notre Dame. . . . Word from **Jim Byrne** tells that he was appointed to Chief, Division of Engineering, U.S. Forest Service last year. . . . **Fred Ebersole** has been awarded a jewel-studded gold service emblem by General Aniline and Film Corporation in recognition of his 35 years of service to the firm. He is now corporate manager of college recruiting for GAF. . . . An article in the IEEE Transactions tells that **Eugene Macoy** is Educational Television Director for the Darien, Conn., public schools. . . . Upon his retirement, **Norman Thomas,** special assistant for research and development management programs of the U.S. Army Aviation Material Laboratories (AVLABS), received an AVLABS Plaque and certificate of achievement. . . . Congratulations to **Jim Fisk** upon his election to the National Academy of Engineering in Washington. . . . Spoke with **Bob Fleming** via ham radio who said he was sorry that he couldn't make the Reunion.

The only unhappy thing about being Class Secretary is to have to tell of the death of our classmates, especially those whom I knew well during our undergraduate days. **Hal Genrich** was one of them, and it is with great sorrow I have to tell of his death on July 7. I'm sorry, also, to report the death of **Tom Wright** on April 30 and **Dick Baldwin,** date unknown. . . . New addresses reported since the last Class Notes are **William A. Brown, Jr.,** 1630 Sheridan Road, Apt. 8-E, Wilmette, Ill., 60091; **Dr. Gerard E. Claussen,** 3233 East Presidio, Phoenix, Ariz., 85032; **Daniel S. Connelly,** 2994 Scarborough Rd., Cleveland, Ohio 44118; **John B. Coyne,** 28 Nichols St., Salem, Mass., 01970; **Charles E. Crawford,** 1300 LaCresta Dr.,

Los Ahos Hills, Calif., 94596; **Harland A. Danforth, Jr.,** 18101 Gillman St., Irvine, Calif., 92664; **John H. Dodge,** 298 Concord Rd., Wayland, Mass., 01778; **Dr. Fred Ebersole,** 2084 W. Lakeview Trail, Lake Shawnee RD #3, Wharton, N.J., 07885; **Admiral Truman J. Hedding,** 6 Crocus Place, Menlo Park, Calif., 94025; **Ibrahim Z. Kinawy** Deputy Minister, Aswan Dam, Egypt; **Michael Kundrath,** Red Oak Road, Fairfield, Conn., 06605; **Robert J. McMinn,** 383 Chester Dr., Cocoa, Fla., 32922; **Col. Wiley Moore,** Apt. 508, 5225 Conn., Ave. N.W., Washington, D.C. 20008; **Col. Charles Robbins,** 5621 Green Tree Rd., Bethesda, Md., 20034; and **General Henry R. Westphalinger,** Glenwood School for Boys, Glenwood, Ill., 60425—**Edwin S. Worden,** Secretary, 35 Minute Man Hill, Westport, Conn.

'32

You will receive information leaflets and reservation forms for the 35th Class Reunion before the end of the year. It will be held at a resort hotel near Boston and close to the M.I.T. campus—the New Ocean House at Swampscott, Mass., on June 9, 10, 11, 1967. The facilities will enable you to relax and just visit with friends or to combine a little business with pleasure if you have interests in the New Boston or the New M.I.T. From scanning this and previous issues of these Class Notes one can draw a pair of conclusions. We have a great many classmates with busy lives and continuous duties and responsibilities at this point in their careers, scattered all over the country. We also have a substantial number of classmates located in M.I.T. and in the Boston area. This leads to the belief that we can match up interests—business, professional, and social—of those who come to the Reunion from afar with some one from the local area who will make your visit both pleasant and productive. We haven't really figured out how to organize this effectively yet, but perhaps I'll draw some responses to this early trial balloon which will help in the planning.

A note from **Philip E. Keene,** living at 1819 Duncan Lane, Pullman, Wash., that he has recently completed his 20th year as University Architect for Washington State University where he is responsible for campus planning and new construction. Come to our 35th Reunion next June, Philip, and I will arrange a private tour highlighting the architectural features of all the new buildings on the M.I.T. campus. . . . **Francis T. Gowen,** who is living at 137 Wood End Road, Newton Highlands, Mass., sent a note saying that he has recently been transferred to the position of contract administrator for the Raytheon Company's Submarine Signal Division at Portsmouth, R.I. He has been with the Raytheon Industrial Components Division. . . . **Erskine G. Roberts,** 8608 So. Dorchester Ave., Chicago, Ill., writes that he is project manager and experimental beam engineer in the Particle Accelerator Division of Argonne National Laboratory and conducted a tour of the 12.5 Bev Argonne Atom Smasher following the June dinner meeting of the M.I.T. club of Chicago. We will try to reciprocate, Erskine, and arrange a tour of the M.I.T. accelerator facilities for you during our 35th Reunion weekend next June. . . . **John Lawrence** has been elected to the Board of Directors of the Santa Fe Railway. As you know, John is chairman and president of Dresser Industries of Dallas, Texas. Now that you are in the railroad business, John, you will be interested in seeing what is going on at M.I.T. under "Project Transport" when you come to the 35th Reunion next June. . . . Professor **John T. R. Nickerson,** who has been an M.I.T. faculty member since 1951 will spend six months from September 1, 1966, as Visiting Professor of Food Science on the Urbana campus of the University of Illinois. Classmates in that area may find this an opportunity to renew contact with John. . . . **G. Edward Nealand,** your Class President, was elected President of the National Association of Educational Buyers in May. Ed has served as Treasurer for the Association for the past five years and will preside as president at the convention next May in Miami Beach.

Professor **Carroll Wilson,** Professor of Industrial Management at M.I.T., addressed the M.I.T. Club of Buffalo in May on the subject of "The Promise of Science and Technology in Developing Countries." You will remember that Carroll was a director of the M.I.T. Fellows in Africa program in 1960, and is now a member of the United Nations Advisory Committee to the Economic and Social Council on the application of science and technology to economic development. . . . Dr. **John A. Fellows** discussed his recent world trip as president of the American Metallurgical Society at the Shelburne, Mass., Historical Society in July. John is head of the Metallurgical Development Department, Uranium Division, of Mallinkrodt Chemical Works in St. Louis. . . . Professor **Steven A. Coons,** of the M.I.T. Mechanical Engineering Department has been active in several areas utilizing the new computer-aided design techniques. A paper entitled, "Surfaces for Computer-Aided Design of Space Figures," describes a flexible, mathematical technique for defining surfaces. It has been used as the basis for describing actual body parts by the Ford Motor Company. Steven has also presented the topic of "Computer Art and Architecture" at the National Art Education Association convention in Boston. This seems a fascinating range of applications for this new computer technique. . . . Professor **Albert G. H. Dietz,** Professor of Civil Engineering and Architecture at M.I.T., is the author of a new book entitled, "Composite Materials," published recently by the American Society for Testing and Materials. The superior properties required in materials for applications in the modern technologies are being met by composites that combine the qualities of several materials acting in concert.

Dr. **Irving I. Schell,** who worked at M.I.T. for many years, is now with the Ocean-Atmosphere Research Institute at Cambridge, Mass. He suggested a method for long-range weather forecasting for regions affected by North Atlantic weather conditions to the Second International Oceanography Congress meeting in Moscow in June. . . . Professor **Manson Benedict,** head of the Department of Nuclear Engineering at M.I.T., at the Mid-year meeting of the New England Council in June, predicted that the construction of the 11 efficient modern generating stations planned by New England power companies would reduce electricity costs by an average of 2 mills per kw. by 1973. Half the new generators in this period will be nuclear, and he predicted that all base-load power stations built in New England after 1973 would probably be nuclear. . . . The sudden death of Professor **William H. Radford,** 56, Director of M.I.T. Lincoln Laboratory on May 9, 1966, brought to a close a 35-year association with the Institute. He leaves a widow, Pauline. The family home is at 74 Edmunds Road, Wellesley, Mass. . . . Dr. **Maurice A. Cooper** died in May 1966 at the University of Wickwaterstrand, Johannesburg, South Africa.—**Elwood W. Schafer,** Secretary, Room 13-2145, M.I.T., Cambridge, Mass.

'33

Here we go again, folks! We are off and running on a brand new year—semester anyway. Believe it or not, this part is being written June 14, the day after Alumni Day, and, I fear to put off writing this stuff because I may forget it, or some critical part. Leona and I arrived at Building 7 lobby for the customary registration, about 11:00 a.m.; met **Bill Baur** almost at once; looked around for Ray Douglass, Ph.D., Class of 1931; talked with an old friend, Frank Schreiner, of the 40th Reunion Class of 1926; then we went to the "Cage" for lunch, which is usually held in the Great Court, under a tent; no good this time, as it had been raining, and was rather soft underfoot. Listed on the Big Board at registration as having paid up for attendance were Ed Atkinson, V; Tom Galvin, XVII; Chas. MacMillan, II; Dick Morse, VI; George Seavey, II; Jim Welch, XV; Westy Westaway, at large. Of these, Jim Welch did not show up, or at least I did not see him. However, there are always a few who decide to attend, but too late to classify, to wit: Clarence Farr, XVI, Bill Baur, II; Bob Gammons, II; and, Dick Zimpel. Ladies of the house, in full bloom were Les Mesdames Farr, Galvin, MacMillan, Morse, and I pray that I have missed none of these lovelies. At these affairs, there is always a lot of gossip, and some ad lib reminiscing. Much of this is grist for the Notes Mill, but, I can't remember much of it. So, I can only mention a few names and hope that these fellows will fill in some of the gaps. **Bill Baur** had an interesting observation. It seems that William checked into a Holiday Inn, in Burlington, Iowa, and on the big sign, in neon lights, was the following: "Congratulations, Bill Baur, on your 30 years with General Electric." Well, Sir, you could have knocked Bill over

with a claw hammer. Anyway, it was a nice gesture, though Bill claims he doesn't know who informed the motel folks.

Ed Atkinson spoke with me briefly, but promised to write a short biography later, Ed (I got a little out of him) goes through this little garden spot (Exeter) infrequently, but doesn't stop, but he will sooner or later. It seems that he taught Chemistry at our State U, quite a while ago. . . . Someone saw **Frank Der Yuen** in Hawaii, and the one who saw was either Bill Baur, or **Clarence Farr.** I will take Baur until corrected. Did you people know that a mistake in the Notes gets more action that a whole bag full of facts? . . . Not so pleasant is word, thru **Dick Zimpel** that **Gene Cary,** XV, is ill with multiple sclerosis. Gene and his lovely wife, Doris, would be glad to hear from any of his old friends. The address is 736 Oak Street, Steamboat Springs, Col. Gene (or Doris), I would not feel too badly were you to drop me a line, and tell me how the Steamboat ever got that far upstream. . . .

Alumni Day is a memorable day, any way one looks at it. The program from start to finish is well-arranged, so as to reach whatever type of mind becomes involved. More of the fellows should make a real effort to get to Cambridge for this event.

I find that a couple of our classmates have passed on to their reward: **Henry Risley,** of whom I had hoped to hear more for this issue, and **Al Munson** of Chicago, of whom I heard too late for inclusion in the July issue. Al died April 7, 1966. In June of 1965, he was very suddenly struck down with leiomyosarcoma, which is a rare form of cancer. Al went through the indicated surgery, and made it for a time, on account of his very rugged health and determination. He spent the summer of 1965 in Idaho, at Coeur d'Alene, in the mountains and Lake District. Then he came back to Chicago to finish the new Chicago City Filtration Plant for which he was director of the system planning unit. Al attended the Univ. of Washington, 1927-8, graduated with us June 1933, was with the American Newspapers Association, 1933-7; statistician with the Hearst Enterprises, Inc., 1937-43; senior staff engineer, Business Research Corporation; salary stabilization analyst, U. S. Government; and systems analyst for the Chicago Water Distribution Department since 1954, as well as Director of the Planning Unit. He was a member of the Chicago M.I.T. Club, American Statistical Association, and City Club of Chicago, graduate assistant in the Dale Carnegie courses, and had taught at the Problem Solving Institute at the University of Buffalo. Al married, November 30, 1940, Marilynn ("Tad") Martin of New York (Smith '36 and Yale '39), and is survived by his wife and two adopted sons, Ames and Blake, 18 and 17 respectively. I am sure that all of us offer our kindest sympathy to Tad and the boys.

The press gives us the story of our own **Gilbert King,** Ph.D., M.I.T., 1935 (S. B. 1933, also). Dr. King has been named associate general manager of Aerospace Corporation's Laboratory Operations in El Segundo, Calif. Dr. King has been with Itek Corporation, in Lexington, Mass. From 1958 to 1961 he was director of research for IBM, and from 1952 to 1957 was chief engineer for International Telemeter Corporation in Los Angeles. Also, he was a research assistant at M.I.T., and with Arthur D. Little Inc., in Cambridge. He found time enough in there somewhere to be an instructor in chemistry at Yale. Gil holds a number of patents, presumably in chemistry, and has articles published in technical books and journals. Gil and Abigail Adams King have two children, Helen E. and J. Anthony. Our congratulations.

Sam Wall, VI, has been awarded the "Northeast Division Engineer of the Year" for 1966. The announcement was made by Captain G. L. Moeller, Director, Northeast Division, in conjunction with national Engineers Week. Sam is manager of the Division's electrical branch. . . . These press clips are sometimes amusing. Here's one clipped in February, lost along the way, which tells us that our **W. M. Murray,** Professor of Mechanical Engineering at M.I.T., is to take part last March in a "short course" at the University of Houston, the course to cover subjects photoelasticity and strain-gage techniques. We have a highly laudatory mention of Professor Bill Murray, written by Dr. August J. Durelli, Professor of Mechanics at Catholic University of America. Dr. Durelli was honored in being asked to deliver the William M. Murray Lecture at the second SESA International Congress on Experimental Mechanics. The Society, in turn, has honored Dr. Murray in naming this important lecture. Our irrepressible beloved **Morris Cohen** pops up again with another honor. The Hartford Chapter of the American Society for Metals presented Morris with a silver replica of a Rockwell Hardness Test Block, in appreciation for his Stanley P. Rockwell Lecture on "Strengthening Mechanisms in Steel." This one, too, is a February release. Perhaps the Alumni Office will, sooner or later, get fed up with these press bureaus and their much belated clips. Good stuff, Morris.

As press agent for **Mal Mayer,** I beg to report that I have before me a letter from Mal himself. He also gets writeups thru **Cal Mohr,** and he is good copy and rates the publicity. Mal writes from Carmel Valley, says he appreciates the Notes, and reports he still carries directions given him some time ago on how to get to the Henderson Farm. Mal is semi-retired (he has agreed to work 100 days a year for Schwartz Services International as a consultant) and hence may find time to stop in on his way to something more attractive in Maine come summer. It appears that Mrs. Mayer decided the matter of his retirement when she contemplated having Mal around the house all day (24 hours) and decided that something to keep the guy busy would be very much in order. Now, here's how he spends the "100 days:" In January, they left on a trip covering Australia, New Zealand, Thailand, France, Belgium, and the Netherlands, and returned to New York City, spent four days there, then drove to Mexico, where they met their younger daughter and spent the Easter Holidays showing her the country. Then they drove to Carmel Valley, Calif., where the Mayers spent (April) a couple of weeks with the mother of the bride. There appears to have been plenty of relaxation involved in this visit. And, in a few days headed east and saw another daughter and her son, in Hamilton, Ontario. What a left handed way of joining the Grandfathers Club!! Then, first week in June, the Mayers headed for Maine, their summer home state. Thanks, Mal; a fine, newsy letter.

Incidentally, Mal makes mention of Cal Mohr and his nose for news. About a month ago, the Board decided that there will be no more free publicity for classmates in the Notes, unless the material came directly from the man involved. I sent out 10 note-o-grams mentioning the above, and what to do: "just fill in the blank space opposite, and mail." I got three replies: two excellent notes and one with somewhat less merit. In fact, this fellow seemed to resent my having time to annoy him by writing.

I have, from **Bill Reed,** and **Tom Fitzpatrick,** two very fine replies. Only incidentally, these two men are both Course IV. Tom was dean of the School of Architecture at the University of Virginia, and we covered most of Tom's accomplishments in a previous issue. Bill is a cattle breeder (can't be Angus or Tom would have said so) in Colorado; Pete is in social service in Virginia, and Kevin is finishing college and is theater bound. Tom's hobbies: painting, tennis, and travel. He is resigning his deanship to return to teaching and consulting practice. He was with the Manhattan Project until 1952, has been interested in rehabilitation programs and facilities, and spent 18 months in research in this field in 14 countries. Tom has written countless articles in many publications, and he is proud to announce that he has taught several sons of classmates but does not wish to wait for their grandchildren. I hope to get a card from Tom from Deutschland this summer, where he is doing a bit more research.

Bill Reed has also been mentioned quite recently in these notes, and he, too, came through with a very fine set of usable facts. Bill and Julie are going to Washington, D. C. early in June to see their son, Carl Christopher graduate from St. Alban's School. Carl has been accepted for admission to Cal Tech next September, under their early decision plan. Daughter is to be picked up at the Shipley School of Bryn Mawr, after the Washington activities, and then the Reeds take off for Illinois to visit Bill's brothers and their families. . . . We have another clip about Dr. **John J. Hanlon,** City-County Health Commissioner, Detroit. The good M.D. also holds down the job of Chairman of the Department of Community Medicine, Wayne State University. Dr. Hanlon seems to find it easy to work in two professions, education and public health, with plenty of overlap, it seems.

The Alumni Association turns up a word from **Raymond Sohn,** IX, at present connected with the Federal Small Business Administration as advisor and management engineer. . . . **John David**

Sweeney of St. Louis has recently been advanced to fellowship in the American Institute of Architects in recognition of his services to the profession of architecture. John was among 60 architects advanced this year, bringing the total of Fellows to 698; it would be interesting to know how many M.I.T. men or women are Fellows. Anybody got that figure? John has his own firm, organized in 1939, in St. Louis. Along with his many professional accomplishments, John has found time to serve as president of the St. Louis Chapter, AIA; has been secretary and vice-president of the Missouri Association of Registered Architects, and has served as chairman of that Chapter's membership committee. In recommending John for his fellowship, his colleagues have recognized his continuing efforts to promote the cause of his profession. Thanks, John, for giving us a chance to salute another good man.

Although he has been mentioned before in these pages, we now hear directly from **Frank R. Heselton** of Sault Ste. Marie, Mich. Frank begins by offering an apology for not having written to us before. His nice letter is in the form of a biography, of which stuff I could use more. Frank had his girl all picked out before he took his degree and married her right afterwards. He says, "She is prettier than ever." Frank Jr. is an economist with the Post Office Department and is attending the Law School at George Washington U. Jr. has recently acquired a red-headed bride, and it is rumored that Frank, Sr., will be a grandfather around year-end. The second son of the family is attending Michigan State U, and is majoring in theater; stage design, lighting, and many other aspects of that fascinating business. Frank's only daughter is just finishing her second year of college, though it is not clear where. Now for Frank: he is assistant chief of operations of the St. Mary's Falls Canal (the Soo Locks). He intends to retire in a couple of years, probably to go into politics. He is serving his fifth term on the "Soo" Board of Education and was elected to the Michigan Association of School Boards in 1964. He has contributed to their Journal and has had some recognition for articles written for national distribution on education. He indicates that he distinguished himself by heading up a movement to recall the Mayor of Sault Ste. Marie. However, he does not recommend this type of activity as a form of recreation, as it is, at best, very rough indeed. Frank's honorary award from the National Federation of Federal Employees has been reported before here, but now we can add that the award was for his outstanding contribution to the organization, having instigated new procedures and a new set of objectives for the Fedration; they had to oust a president and elect a new one to carry out Frank's new Code. It appears that Frank has visited the Institute a few times but has never made a reunion. So, we can fix that! Frank, keep posted on the 35th, coming up, and for sure. This fellow has surely had a full life, and quite apparently enjoys the esteem of his fellows. Thanks a million, Frank, for the fine letter.

The press now catches up with Ye Scribe; The Oil Daily, in May carried a story of the top men in the American Oil Company, starting with **L. W. Moore,** M.I.T., 1933. He started in a California refinery in the summer of 1929; then he went to Boston Tech, graduated as a chemical engineer with us, and went with Standard Oil (Ind.). In 1935 he was sent east as manager of Standard's East Coast subsidiary, Pan American Refining. In 1947 he became general manager of Pan Am, and two years later became president. He became First vice-president of the Pan American Petroleum and Transport in 1953, and in 1954 was made executive vice-president of American Oil, after Pan American was merged into Standard of Indiana, and American Oil emerged as the successor company. He was made president of American in 1957. Bill, please accept our best wishes for continued success.

Now comes our own **Athelstan F. Spilhaus**. A long article in the news report of the National Research Council tells us of a suggested program (Federal) of experimental study into waste management. A committee has been proposed by the National Academy of Sciences as a "first strategy" attack on environmental pollution, a really massive and urgent problem. Athelstan is chairman of the committee, and he and his committee have undertaken a monumental job. He will be remembered as Dean of the University of Minnesota Institute of Technology. The enormity of the problem is brought to our attention with the statement that, by 1980, sewage and other organic wastes will be sufficient to consume all the oxygen in the nation's 22 river systems during their dry season flow. . . . Again comes **Morris Cohen,** Ford Professor of Materials Science and Engineering at M.I.T. (that used to be Metallurgy), making with a lecture to the Chicago Chapter of the American Society for Metals on "Heat Treatment of Steel-Theoretical and Practical Aspects of the Strengthening Mechanisms."

Carl G. W. Swanson, Course I, sends his kind regards and best wishes to both the Class of 1932, with whom he started, and ourselves, with whom he graduated. His greetings come to me through one of the Alumni Association questionnaires. Carl sure made it brief, too; 24 words. . . . Friends of **Sam W. Grossmann** will not be too pleased to hear that Sam is retired on account of poor health. Why not drop him a line? I wrote a short note to **Chuck MacMillan** asking about the M.I.T. Club Fiesta in Mexico City, and he came back with a two-page letter, which I quote in part: "Members of the Club in Mexico City met us at the airport, displaying a big sign, 'Tech is hell.' We had no trouble identifying them." Chuck says that only he and **George Henning** were present from 1933. Golly, George, why could you not have dropped me a short note, friend? The officers of the Mexico City Club were all there: James Rattray, President—Armando Santacruz B, Chairman—Richard Bowlin, Chairman (another?)—Clarence Cornish, Reception—Ian Clark, Treasurer. Chuck also notes that Maco McKenna, Dr. and Mrs. Stratton, and Conchita Lobdell, the widow of our old Dean Lobdell were there. Chuck goes on to tell what a fine time they all had, and what a fine idea it is to hold this Fiesta, and further, what a novel way of spending a few days' vacation in this land of sunshine and senoritas to our South. Chuch said that his two sons are already out of college, and that the elder, Jim, M.I.T. 1965, is now studying medicine at Western Reserve U. in Cleveland while the younger has decided to go to work, having just graduated from Dartmouth. Old man MacMillan is also working. Fine and dandy, Chuck, and many thanks for your fine and highly informative letter.

Dick Morse pays his debt to me for a previous mention by doing what the rest of you should; he writes a short, terse, and highly acceptable current biography. Dick has returned to his alma mater as professor in the Sloan School, in charge of a course, and I quote, ". . . in new enterprises and the organizing, management and financing of technical compaies." He spends, "roughly one third of the time in academic work, one third in industrial, and one third in Washington." Dick furnished me with all of his addresses. "Tech is a far different place from that of 33 years ago; it is both stimulating and educational." Thanks, Dick.

The press comes through with a long story on **W. W. (Chic) Laird,** of Wilmington, Del. After '33, Chic did some graduate work at U. of Penn., and then spent seven years with DuPont; he has been in Delaware ever since. After du Pont, Chic started his own firm of consultants, which specializes in industrial advising to small businesses; firm name Rockland Company, of which Chic is president. The remainder is continuous: vice-president of the Delaware School Auxiliary, dedicated to improvements in schools and education; director of two banks, the du Pont Trust Company and the Wilmington Trust Company; was treasurer of the Christiana Security Company from 1961 to 1964; Young Man of the Year in 1943; received the National Recreation Award in 1956 for his founding in 1932 of the "Recreation Promotion Service, Inc."; founded the Brecks Mills Cronies, an organization which sponsors musical and dramatic activities, art exhibits, band concerts, and many other cultural activities. With all this in mind, the University of Delaware awarded Chic the honorary degree of Doctor of Laws. Our most sincere congratulations, Chic, from all your classmates.

Slick Henderson (no relation) replies at some length. He was elected president of the alumni of Westminster (Missouri) College, and the school published his biography in short form. Slick says that we had one class in common at the Institute and can't remember which one. Slick was graduated from Westminster in 1931 and from M.I.T. in 1933 as a Bachelor in Architectural Engineering, which has since been done away with. Well, you can't do away with the Alumni. Later, Slick took a degree in civil engineering at Washington University and he is a registered professional engineer in Missouri and Alabama. The remainder is just as good, and is continuous, also: married Ida Bess Logan, a graduate of Drury College; has

four children, two daughters, graduates of Vanderbilt and DePauw, a son who will graduate from Westminster in 1968, and another daughter who is in grade school; in the '30s Slick worked as an engineer for the State of Missouri, sold cheese or something, for the Kraft-Phoenix Corporation in San Francisco (I am NOT making this up, I am copying it); in 1938, in Fulton, Mo., he formed a partnership with two other architects and engineers and called it Henderson-Elsner and Merrick; in 1942 he went back to Boston as a structural engineer, then into the Corps of Engineers, U. S. Army, for the duration of the war. He was placed in the Retired Reserve in 1961; in 1964 he became associated with Sverdup and Parcel Associates, a world-wide firm of architects and engineers, and he is now vice-president, chief engineer, assistant treasurer, and director. In his spare time, Slick is an elder of Webster Groves Presbyterian Church, superintendent of the Junior High Department of the church school, and chairman of the nursery school board. Since 1951 he has been a member of the Westminster Alumni Council, and he is active in the work of the Boy Scouts. It remains for me to be more than pleased to have had only one class with this character. He would have had me working. Slick's more formal name is Elmer Charles Henderson Junior.

I was honored to receive a formal invitation from the Texas Chiropractic College to attend the inauguration of Dr. **William David Harper** as their new President (reception, too). I was unable to attend. Houston in the middle of August is a joy to stay away from. . . . As a student my closest friends were Harper, Crick, Goodridge and Moeller. Well, I hear from two of them! Bill's middle name is David. . . . Through the Alumni Association we hear from **Leight Rickards,** for the first time in my memory. Leight is TRW Systems, formerly Space Technical Labs, at Cape Canaveral, it says here on his less-than-a-year-old card. Us Floridians call it Cape Kennedy, if only for the sake of uniformity. He is manager of product assurance. Leight has one daughter, a sophomore, and another a junior, at Brigham Young University, a son about to become a junior at Satellite High School, and a third daughter in junior high. . . . Just a short note from **Cal Mohr** last time out. He says that he and **Pete Parker** were the only '33 men at the June Chicago regional meeting of M.I.T., people at the zero gradient synchroton, Argonne National Labs. Pete, it turns out, is chief engineer at Kolor Labs, cosmetic consultants. Pete's son has returned to New England and is with the Miniature Precision Bearings, Inc. at Keene, N. H. Incidentally, this outfit is a fabulous operation, and the bearings really are miniature.

It is now an assured fact we will have a 35th Reunion, I am happy to announce to the faithful. It will be at the Chatham Bars Inn, June 7-8-9, 1968. Mark your calenders now, so that there will be no excuses later. Incidentally, every class since 1916 has held a 35th, so that we are establishing no precedent.

From our own Class "Beaver," **Jim Turner**, Executive Veep, I have the following message, which reflects Jim's unspoken pride in an accomplishment: "Our three-year project to raise $50,000 for a scholarship fund in memory of the late **Robert M. Kimball** became fully successful on June 30, 1966, when the $50,000 mark was passed. Ken Brock, Director of the Alumni Fund, wrote Jim as follows on August 1, "As of June 30, 1966, you have reached $51,482.01! This includes accumulated interest—not a very great portion—and it puts you past your goal. Furthermore, your plan to put the fund to use now will be particularly appreciated by M.I.T. since the demands and needs for financial aids have increased dramatically this past year." A letter was sent to M.I.T. signed by **Ed Goodridge** and myself on behalf of the class, in which we requested that the fund be administered along the following lines, "The Scholarship Fund is to be known as the Class of 1933—Robert M. Kimball Scholarship Fund. We request that awards be made, from funds available, to students with established needs as may be determined by the Student Aid Office. We request that preference, wherever possible, be given to descendents of the Class of 1933. By Funds available we mean such funds as are obtained from income of the fund. It is not the intent that the fund itself be utilized for the granting of scholarships, but only the income therefrom." To all of the members of the Class who contributed to this worthy project my many thanks. Bob Kimball and the Class of 1933 will be remembered at the Institute as long as it exists. This fund is an open-end fund and may be added to at any time by any member of the Class who so wishes. I have mentioned to Jim that the Class has no other project of this kind until the big time rolls around on the occasion of our 40th reunion, where the gift becomes a major project. So, folks, we have approximately seven years to double this fund if it pleases us, and I know that there are some fellows who just could not afford to contribute this time but will find occasion to later. Any gift whatever swells the total.

I have a nice note from **Norma Koch,** of Turners Falls, Mass., who thanks me for a few flowers, sent, belatedly, on the occasion of her becoming a charter member of the grandmothers' club. Norma and Gene Kock will be the first 1933 classmate and husband who have attended a class reunion. I am trying to find a lady classmate, in addition to Norma, to make up a congenial twosome of gals: any early volunteers?

We have a short one from **Ellis Littmann,** the St. Louis Adonis. He saw **Walt Skees** in the Bahamas, where Walt is active in real estate. **John Sweeney** is still busy as the chairman of the State Board of Architects. . . . Now comes **John King,** of the Cleveland Master Builders, with a fine letter on his travels in New Zealand and the Far East: Invercargill, New Zealand; Sydney, Australia; Thailand, Manila, Hong Kong, Tokyo, and Honolulu: Mr. Polo himself. It appears that John is an engineer, as his job in New Zealand was on grouting a seven-mile, 32-foot, horseshoe shaped tail race tunnel for the Manapouri Hydro Project. John tried to visit down under during our northern summer, and found it quite cool, dressed as he was for the tropics. He says that down under they open the windows at 65 degrees because it got stuffy. John will report later on a meeting of the Executive Committee of the Construction Division of the ASCE Thanks immensely, John.

We have the following changes of addresses, and the changes themselves are not included. One has only to write in for an address at any time. **Dayt Clewell** VIII; **Outerbridge Horsey,** XV; **William L. Sheppard,** XVI; **Tucker Vye,** XV; **Mort Williams,** X; **Bill Rand,** X; **William Chase Jr,** VIII; **Frank Bleil,** VI; **Adrien Collin,** VI; **Jose B. Calvo** (they moved an Embassy including Jose); **John Campbell, Jr.,** VIII; **Mel Dolan,** II; **Morris Guralnick,** XIII; **Roy Hall, Jr.,** XV; **James A. Hayes,** II; **William Hinckley, Jr.,** II; **Gustave Kidde,** X; **Edward C. Peterson,** I; **J. Mason Culverwell,** III; **William Arnott, Jr.,** VIII; Col. **Dominic Chiminello,** XIV; **Gus Liljegren,** II; **David Nason,** XV; Mrs. **Laverne Barnes,** VII; Dr. **John G. Hayes,** VI-A; Dr. **Gilbert W. King,** V; **Bryce Lyall,** IV; **William Niessen,** I; Mrs. **Robert P. Simmet,** VII; **Henry P. Wickham,** X; **Bob Winters,** VI-A; **Ralph Cross,** II; **Larry deGive,** II; **Charlie Thumm,** XV; **J. Terry M. Smith,** XIII-C; **John F. Duby, Jr.**

I have a few folks to whom I have written, and about whom I am concerned: **Harold Conger, Hugh MacDonald, John Sweeney, Lynn Williams,** Dr. **John Hanlon, Lou Flanders** (though I hear via grapevine that his is a long vacation.)

Who should drop in at the farm a week or so ago but our own **Horace MacKecknie,** a Scot for sure, but from Virginia. We had a real nice visit, as I was alone at the time, and was probably deep in meditation, so you see the Scot was a bit more than welcome. He is still with the Value Engineering Service office about which we wrote a couple of years ago; the branch of Department of Defense where they are supposed to keep careful watch on defense expenditures, and all of their projects of an engineering nature. . . . We have no details except that **James L. Hibbard** passed away in Montpelier, Vt. Jim was a Course I chap, who did not finish with us. We, as a class, offer our sincere sympathy to those loved ones who survive.—**Warren J. Henderson,** Secretary, Drawer H, Exeter, N. H. 03833.

'34

Dear Charlie, "Just happened across something which reminded me how bad we of '34 are at feeding you fellows for the Tech Review. But next came 'Let's see, which of the three or four should I address something to if I do get off my tail and write?' No Review to refer to. When the last issue came the other day it found

me in one of my 'get rid of every piece of paper after it has served it's purpose' binges, and after reading it, into the trash barrel it went. So I hope I'm not off base by sending this to you. Right now I'm on a job that will likely keep me occupied full time for another two years and I'm not actively doing any consulting with some possible minor exceptions. Also, I may very well stay with the company I'm with now after the present job is completed.

"As to other fellows who were at Tech when we were there, I bump into one or another occasionally. Where I am now I see Ken Romberg and Charlie Palmer every day. Both were naval officers taking Course XIII-A when we were alongside the Charles. Ken retired several years ago as a captain and is naval architect for the company I'm with. Charlie retired as an admiral (Rear Adm.) a couple of years ago and is resident representative for National Science Foundation here during construction of the Mohole Platform. During the years I've run into a number of the Navy group who were there at our time. In the '40's while I was with Ingalls at Pascagoula, Miss., **Jack Roe** was there for the Navy. A few years later he died of cancer. **Henry Rumble** retired as a captain and for the last few years has been with Rand (Research and Development) in Santa Monica. When I lived in the Los Angeles area I used to see him frequently as he is quite active in the Naval Architects. Currently he is secretary of the So. Calif. section. I still see him, but infrequently. Henry was commanding officer at Portsmouth during a period in 1959 when I spent a couple of months there and also had a group of other people learning how to put together all the jazz that goes into the nuclear plant of a submarine. Another Navy student I dropped in on a few years ago when he was C.O. at San Francisco is Charlie Curtze. You may be aware of the publicity he received a year or so ago when as Rear Admiral and Deputy Chief of BUSHIPS he resigned in protest on some of MacNamara's ideas. At times I've run into Floyd Schultz who is still active as a Rear Admiral, his present duty being top man at Puget Sound Naval Shipyard.

"Before we get off the Navy, it has benefitted from a few of our non-Academy, regular Course XIII, '34. It has been several years now, but once in awhile I used to see **Ed Fleming** when he was a captain and member of the Trial Board. Ed always was a swell guy even though I do have to say that when you're finishing a ship as a private shipbuilder you never nominate a member of the Trial Board for "Most Popular Fellow of the Year." Probably Ed's greatest attributes are his fairness and willingness to listen to the other fellow's story. From Alumni Info, I understand he now is in Puerto Rico in a shipyard management position. Incidently, a few years ago I vacationed in Puerto Rico after I had completed a rather strenuous assignment and I fell in love with it and the Virgin Islands. If you like gorgeous weather and salt water, have a yen for the dice table, like real soothing rest and yet some good night spots, head for there. Navy, also—I've corresponded once in a while with and also had the opportunity in Boston to see **Charlie Wright.** I guess most of the readers of The Review and marine publications know that Charlie, in a civilian capacity, had contributed tremendously to the Navy, all the way from everyday stuff to what's needed to win wars in 1966.

"I haven't seen **Doug MacMillan** for quite a spell now, and a good number of our classmates already know about Doug. For a number of years he has been president of George G. Sharp, the naval architectural firm based in New York, and is of course a recognized authority in his area—not just the design of ships, but also the administrative phases of such operations. **Stan Bebler** is in that same area. About two years ago I spent a few days in New Orleans on a job for Lockheed and Stan and I got together for a too-short chat. Stan is a wheel and a partner in the firm of Friede and Goldman, naval architects. His outfit is well known for their progressive and advanced ideas. His family is all grown up, three sons and a daughter as I remember. Getting back to Doug MacMillan in the family line, Doug has two sons, one or both of which, I forget which, are hot shot athletes along with being in the "brains" category. Doug's wife is charming, a wonderful down-to-earth person. All of us, if we read the papers, know about **Don Strohmeier,** of course, who has been in the top seat at Bethlehem Steel shipbuilding for almost 20 years now. On the subject of top seats in shipbuilding, there's also **Ed Sylvester,** a Course II man who for several years headed up American Shipbuilding on the Lakes. From what I've read about Ed he has done terrific things both invention-wise and in management.

"**Don MacNaught** is amongst that group I hear about but don't have any direct communication with. I used to run into him occasionally years ago. He had a very successful career at Beth-Quincy until Beth sold the yard. Upon retiring from there, he went with the Navy in Washington, according to the dope that filters back. Story is that a lot of outfits would like to have grabbed Don at the time, but Don was always one of those real analytical guys when it came to balancing bucks with what he wanted and settled on the Navy, probably with just as many bucks on pay day. Speaking of Beth-Quincy, let's get to **Tommy Donlan.** A few years ago I was working on a job for Todd Shipyard at their San Pedro (Los Angeles) yard and one of the stated objectives was to get persons to fill two particular positions there. I talked Tom into coming out to fill one of them. He did a terrific job and returned to the East Coast a year or so later. Todd made all sorts of propositions to him to remain with the company, but he returned to Quincy to work for General Dynamics who had taken over the yard from Beth. He had returned but a short time when he had a very serious coronary attack. Last January I had dinner with him and his family at his home in Milton, and while he has recovered partially due to his eternal fight and good spirits, he will be unable to work again. If you put any of these ramblings in The Review, would you mind suggesting that fellows write to him. I'm sure he would greatly enjoy receiving letters. Tom, after over 30 years from school, is still the wise-cracking great guy he was back in the '30's. You would be absolutely amazed if I told you about the farewell, including gifts, he received at Todd-San Pedro from his subordinates after only a year there, in circumstances where a new-comer—any newcomer—would receive a very jaundice-eye reception. He had an absolutely fantastic way with subordinates. I might add that along with this, the operations for which he was responsible went down almost 30% in cost.

"We all read about **Bill Baker,** so if I could add any words about him they would be superfluous. Bill seems to be in a spot and doing things which he really loves and doing a swell job of them. I never knew **Hoyt Steele** very well at school but I get vivid green with envy at his success. To any who own ever a piece of General Electric stock, there's no need to comment; to those who don't, buy some of the stock and see where he is and at the same time make a few bucks. As for '34 plus and minus, I see a few of the Course XIII gang. Bill Muller who also had a very successful stay at Beth-Quincy and git 'way up on the ladder is now with L. J. Henry (naval architect) Cohasset office. Bill, '35, is the money man there along with such things as schedules, and I see him frequently when I take a trip back there or he comes here. Bill and I have somewhat of a continuing friendly running battle. His outfit is a subcontractor for us and I still maintain that despite Bill's proficiency in the engineering field, he missed his spot in life. If he were a lawyer for the sea-going unions, ship operators would give up trying to win any point. Morris Guralnick, XIII, '33, is based in San Francisco and had a couple of hundred people working for him in ship work and electronics. Whenever he and I are in the same town we try to get together for eats, drinks and a talk and we range from shop talk to philosophy to mental and emotional problems.

Family-wise, well—my three daughters are pretty well grown up and I trust you won't mind my spouting off some. My oldest, now almost 26, is a housewife, living closeby. She has one son, almost two, and is in the expectant stage for another addition. She is married to a California native-son Dartmouth grad. In college she was anything but tops scholastically, but did manage to scrape by in that area (I think "B" average) so that by one-one-hundredth of a point she made it into "Who's Who in American Colleges and Universities. Needless to say her extra-curricular activities appeared at the time to be the reason, rather than learning, as to why she was sent to college (Catholic University of America in Washington, D.C.). She made a lot of things like homecoming queen, queen of the Military Ball and that sort of stuff, but also was a class officer every year and manipulated enough to become president of her sorority.

"My next one, now almost 24, was somewhat different. She had by far the

best looks in the family, even had a chance for a test to go into movies, but those things didn't interest her. In her mid-teens she changed from a prime candidate for reform school to the possible chance of actually becoming a lady. She was really a tough struggle to bring up in some respects, but since she was a wee bit of a thing she was always interested in dollars and cents more than anything else. She started out at Dumbarton in Washington, a very strict Catholic college. Next year she went to Duquesne in Pittsburgh since she was more interested in business management. Meanwhile, my wife and I had come to California and she (daughter number two) figured the hell with living on the other side of the country even though she liked Duquesne, it would cost the old man too much dough, so she transferred to Univ. of South. Calif., from which she graduated in '64. Hope you don't mind my continued chest throwing, but I really feel proud, because not only did she not lose any time or credits in this tour of "See three colleges in four years" without losing any time or credits, but wound up at USC with the Business School equivalent of Phi Beta Kappa. Further, it wasn't all school work. Right after she entered Duquesne she was nominated (but didn't make it) as Campus Queen, and she was elected, mainly at USC to numerous offices, as you might suspect, generally as treasurer for sorority, etc. After college she passed the exam for registered representative (stock selling) taught statistics at UCLA as a substitute (sideline) and was offered a job teaching (substitute) at USC, finance.

"My youngest, approaching 21, is a senior at Univ. of Santa Clara and is lined up to get a double major, marketing and finance. She just returned from a student tour of Europe and my wife and I are currently suffering the end product of that. She (daughter) is different than the other two in that extra-curricularly, like me, she has drawn a blank. Guess she has too many genes from me and is not quite so interested in those things, although in high school she did make the national Thespian Society for acting ability. Her main interests seem to be studying just enough so there is a chance of making the Dean's List (She has made it several times), but let's have fun too, without any responsibilities for running extra-curricular activities.

"As for myself, I'm puttering along. Right now I'm with Nation Steel and Shipbuilding in San Diego as project manager for construction of the Mohole platform. (Presume you have read the papers enough to know what Mohole is.) As I indicated above, I may stay with the company when the job is completed. It's a wonderful company, owned 50% by Kaiser, 50% by Morrison, and managed by Kaiser. To get on the job I had to agree to take it as a regular full time employee, but at the time I was also interested in such an arrangement. Doing the type of consulting I had been doing was very remunerative, but I wanted to restrict, if I could, the areas into which I might get, and as a result there was always the problem of "what's the next job going to be—who wants a job done of the type I'm interested in?" It was extremely interesting. For example, I did a very wide variety of jobs for Lockheed, still other types for Todd and I was a consultant at the same time for Aerojet. Recently Lockheed called me about another job, but the major troubles are that either they want you to go to work permanently for them, or they don't want you except when they are in a bind, and then they think you're giving them the business so far as price is concerned. In all fairness, though I should add that working for outfits I mentioned is terrific. All in all, you're told what they want and as a general rule the rest is up to you. They don't restrict you. Once you make a deal with outfits like these, whatever success or failure you have is strictly due to how you yourself handle the deal; you can't blame anything on them for interference, restriction on operations, or anything else.

"Another recollection—while I was doing a job for Lockheed I had lunch one day with **John Newell** of our class. As could be expected, John purred forth his inimitable charming urbanity. His domicile is a prime subject for any one of a number of home magazines, and as we all know, John himself in turn is a prime subject for the New Yorker, Fortune, or several other magazines. Should anyone touch base in Bath, Maine, try to talk John into letting you see the home in which he lives. Those of us who know him well enough know also that his cordiality will not make this difficult. John is still the same John we knew in the early 30's. The positions he has has reached in the meantime have not altered his friendliness one iota.

Best wishes, **Jim Sweeney,** 5815 Cactus Way, LaJolla, Calif."—**Charles M. Parker,** Secretary, 3 William St., Norwalk, Conn. Other Secretaries: **W. Olmstead Wright,** 1003 Howard St., Wheaton, Ill.; **Kendrick H. Lippitt,** 8735 Delgany Ave., Apt. 211, Playa Del Rey, Calif. 90291; **Norman B. Krim,** 15 Fox Lane, Newton Centre, Mass. 02159.

'35

I've relieved **Irv Banquer** as your Review reporter for this year. He is in the midst of a grand tour of Europe as these notes are being written. Typing these notes takes me back to a day 35 years ago when I sat in the Walker office pecking out my first report for publication in The Tech. For those classmates who are not ready to admit those years since entering Tech, a return to school will gain you a more recent class affiliation. . . . Our class president, **Allan Mowatt,** has sent notes that he received from **Bill Barker** and **Les Brooks,** along with the news that he, Bill Abromowitz, Chet Bond, Leo Beckwith, Nix Dangel, Bob Forster, Pete Grant, and Ed Staff were together at Alumni Day luncheon on June 13. As noted in the July Review, Al advises that Pete is the new director of Clubs for the Alumni Association. Al also reported that Ed would visit Sweden for a summer month and spend three months in California next winter. Bill Barker reported enjoying golf outings with his wife, Mae, while Les complained that his golf has soured of late. Les also noted that his daughters, Joyce and Linda, graduated from Purdue and Colby Junior College respectively, and that Joyce would be married in August.

Walt Stockmayer, in a letter to **Gerry Golden,** noted that his son Ralph would return to Syracuse University after a three-year hitch in the Army. . . . In short notes to The Review, **Nelson Thorp** advises he is still in real estate, active in YMCA work, both children are married (2½ grandchildren), and he and his wife enjoyed a flying world tour. . . . **Bob Anderson** notes he is still handling construction planning for Filene's, one daughter married (two grandchildren), second daughter to be married soon, third daughter at University of Massachusetts, and son not yet college age; and **Lew Simon** reports he is still at the Naval Missile Center at Point Magu and now lives at 1801 Joanne Way, Oxnard, Calif. 93030

Other address changes received: **Leo Dee,** 128 Cedar Heights Drive, Jamesville, N.Y. 13078; **Gregg Fry,** 80 Cartright Street, Bridgeport, Conn. 06604; and **Wes Loomis,** General Telephone Directory Company, 1865 Miner Street, Des Plaines, Ill. 60016. It would be most newsworthy if each fellow whose change of address is reported in these notes would drop me a note so we can inform all of his current activities.

George Valley was recently awarded the Exceptional Civilian Service Award by the Air Force. His citation reads: "Dr. George E. Valley has distinguished himself by providing exceptionally meritorious service to the Air Force as a member of the USAF Scientific Advisory Board from July 1958 to December 1964. During this period he served as Chairman of the Basic Research Panel and as a member of a wide variety of ad hoc committees. He has made major contributions leading to an improved environment for the conduct of research in the Air Force. The distinguished service provided by Dr. Valley is singularly deserving of the gratitude and appreciation of the United States Air Force." George, who received his B.S. in Physics with our class, is professor of physics at Tech. . . . News of **John J. Waferling**'s death on November 8, 1965 was received. Some of you may recall he received his City Planning degree in IVB with our class. . . . **Carbon Dubbs** has been appointed to the Board of Trustees of Chapman College, Orange, Calif. . . . **Gordon Scowcroft** has been vice-president for marketing of Revlon since March 15th. . . . **Art Linn** was recently appointed technical service supervisor of M and T Chemicals, Inc., which he joined in 1938. . . . **Art Anderson,** who earned his M.S. with our class and his D.Sc. with the Class of 1938, was elected the 43rd President of the Amercian Concrete Institute.

Since coming to Greater Philadelphia in February (I am with G.E.'s Missile and Space Division learning the Aerospace business) I have talked to **Herb Thomas,** who works close to me, and golfed with **Charlie Ross.** Charlie has forsaken chem-

istry and is active in the investment field through his seat on the Philadelphia stock exchange. I hope to reach others in this area before too long, especially **Hal Bemis**. But its going to be rough, as, besides his many other civic and business activities, Hal was recently elected President of the Greater Philadelphia Chamber of Commerce. It may encourage those of you who need a nudge to get into civic affairs to learn that one of Hal's first chores as new president was to host the 20 candidates for the Miss Pennsylvania title at dinner.

When you read these notes the champion of 1935's Sixth Annual Golf Tournament will have been crowned. As we go to press, the semi-finalists are **Dick Bailey, Al Johnson, Gerry Rich,** and yours truly. —**Hamilton H. Dow,** Apt. P-550, Devon-Strafford Apts., Devon, Pa. 19333, Co-secretary; Regional Secretaries: **Arthur C. Marquardt, Jr.,** 178 Mt. Vernon St., Dedham, Mass. 02026; **John H. Colby,** Rt #1, Box 91A, Islamorada, Fla. 33036; **Edward Loewenstein,** 444 Cornwallis Drive, Greensboro, N.C. 27408

'36

Thirty three classmates, most accompanied by their wives and some by offspring, gathered at the Hotel Curtis in Lenox for our 30th reunion. It was a delightful occasion for us all and we were sorry more of you could not have been with us. Contrary to my usual custom in writing class notes I will hold back some information for next month since it is cold already. The summer accumulation has been terrific as the total volume of class notes will attest.

Those present included, in the order in which they signed in: Lawrence and Lillian Peterson, Brent Lowe, Harry and Lorraine Foster (with daughter Meg), Marshall and Vivian Holcombe, Dick DeWolfe, Roger Krey, Fred and Mary Assmann, John and Rosalie Chapper, Alice and George Kimball (with Martha), Bill and Mary Mullen, Betty and Elliott Robinson, Rilla and Walt MacAdam, Frank and Jeanette Berman, Nan and Phil Norton, John and Alba Viola, Al and Ann Dasburg, Tony and Marian Hittl, Vivienne and Eli Grossman, Loreto Lombardi, Warren and Mare Sherburne, Milton Dobrin, Harry and Betsy Essley, Ed and Rose Dashefsky, Bill and Rita Cresswell, Dick and Nancy Halloran, Fran and Leo Kramer (with Arnold and Lois), Mike Tremaglio and Edith, Py and Mary Williams, Henry and Dorothy Johnson, Bill Garth, Bill and Flora Canning, and Dick and Mary Koegler. In addition the number present at Alumni Day raised the total to forty six. These included Ben and Florence Cooperstein, the Mike Lachs, Mal Graves, Martin Gilman, Dorian and Margaret Shainin, Bob Gillette, Dick Denton, George Parkhurst, Herb Borden, Frank Parker, Vince Estabrook, Hal Miller and Jack Williams. Also on deck and looking very official as a member of the luncheon committee was **Ben Fogler.** There may have been others and if so I am sorry to have missed them.

A class meeting was held on June 11th with Vice-president **Brent Lowe** presiding. The treasurer reported a bank balance adequate to finance reasonable class activities for the time being so that no dues assessment will be required (Cheers!). The following were nominated for office and elected unanimously: President, **Tony Hittl;** Treasurer, **Eli Grossman**; and Secretary, **Alice Kimball.** It was agreed that these officers should appoint such vice-presidents as seemed desirable. A letter of appreciation was sent to **Jack Austin** and heartfelt thanks were expressed to **Frank Berman** as Reunion Chairman.

A note from **Colonel Roman Ulans** in Ankara, Turkey expressed regret that he had been unable to attend the reunion and announced that he was retiring from the Army. He is now with ComSat in Washington, D.C. and living at 1031 Dead Run Drive, McLean, Va. 22101. . . . I am sorry to have to report the deaths of three members of the class: **Henry G. Ellis** on April 8, 1966; **James L. Vaughan**; and Colonel **John S. Walker** on December 5, 1965.—**Alice H. Kimball,** Secretary, 20 Everett Avenue, Winchester, Mass. 01890.

'37

John Fellouris, Joan and Wyn Gay, John Nugent, Louis Pepperberg and his wife, Phil Peters, Rose and Bob Thorson attended Alumni Day in June. Next Alumni Day will be our 30th reunion, which will be held June 10-12, at the Oyster Harbors Club on Cape Cod. Be sure to mark your calendar. **John Booton, Ralph Chapin, Harry Kohl** and **Joseph Puffer** have joined the list of those planning to attend.

Wyn Gay was elected Selectman of the town of Northboro, Mass. . . . **Herb Weiss,** manager of analysis, Data Systems Division, Litton Systems, Van Nuys, Calif., has been appointed to the Army Scientific Advisory Panel. Herb is former manager of military systems planning, Aeronutronic Division, Ford Motor Company, and has been associated with Aerospace Corporation. . . . **Bernhard Schondorff** of Erkelenz, West Germany, is the head of his own company which manufactures machine tools—wheel lathes, roller superfinishing machines and deep rolling machines. The first of the year, Bernhard started a new corporation in Detroit to manufacture his machine tools in the U. S. and he writes that the new company is off to a good start. He and his wife Friedl also plan to attend our 30th reunion.

Art Zimmerman responded to my appeal in the May Class Notes with the following letter: "Having just finished reading the Class Notes in the Technology Review for May, I send you belated birthday greetings. I think **John Nugent** had a very nice idea to write you as he did and to reciprocate for those birthday greetings you have been sending to the rest of us. In addition to extending the greeting mentioned above, I am inclined to write you because of two recent contacts with alumni. Agnes and I spent May 2, 3 and 4 in Boston at a convention and then went on to the Hartford area on May 5. We spent that evening and night with **Van** and Eleanor **Van Dorn** in Kensington, Conn. Van is vice-president in charge of engineering, Fafnir Bearing Company. He is also director of Prentice Corporation. On May 22 I was in San Francisco and spent an hour or two with Charlie Price ('36). Charlie is a metallurgical engineer for United States Steel Corporation and is still following his original field of interest, applications for wire rope. As a matter of fact, he has additionally been instrumental in setting up another company, of which he is vice-president, which is concerned with the manufacture and distribution of specialty products involving wire strand. Attorney for this new company is Joseph L. Seligman, Jr., '34."

Edgar Rust has been appointed director of research and engineering of the James Hunter Machine Company, North Adams, a Division of the Crompton and Knowles Corporation. Edgar has served as director of research for the company since 1954. . . . Dr. **Bernard Ross** has been practicing internal medicine in Fort Pierce since January 1962. Had previously been doing the same in Miami from 1945 through 1961. . . . **Thomas Willcox** is working in Mexico City for the year 1966 assisting the Comision Federal de Electricdad with their business information system. . . . **Theodore Weyher** recently retired as Dean Emeritus of Engineering, University of Miami. . . . **Eric Moorehead** is no longer a partnership but now is head of his own consulting structural engineering business. Eric has two children married and is a grandfather once. . . . **John Booton** is chief engineer of Champ Hats, Sunbury, Pa. His new address is 11 Baldwin Circle, RD2 Selins Grove, Pa. 17870. . . . **Harry Kohl** is now Vice-president and assistant general manager for Electronics, Lockheed Missiles and Space Company, Sunnyvale, Calif.

Duane Wood writes that **Aldon E. Acker** died in June 1966. He continues, "Al had been ill for several years as a result of an aircraft accident suffered after he had retired from business. Al had risen in position to President and Director of Hycon Manufacturing Company. He started after graduation with the Nielson Advertising Company, moved there to Lockheed Aircraft Corporation, to CalTech and to Aerojet. He then was one of the founders of the Hycon Company."—**Robert H. Thorson,** Secretary, 506 Riverside Ave., Medford, Mass. 02155; Professor **Curtis Powell,** Assistant Secretary, Room 5-325, M.I.T., Cambridge, Mass. 02142; **Jerome Salny,** Assistant Secretary, Egbert Hill, Morristown, N.J.

'39

During the summer several news items of thirty-niners accumulated, and here they are, short and succinct. In the Com-

monwealth of Massachusetts, Department of Public Works Commissioner **Francis W. Sargent** (IV) resigned his post in June to seek the GOP convention endorsement for lieutenant governor. According to the Boston Traveler's news item, Governor Volpe was impressed with Sargent's handling of the huge spending agency, and was expected to conduct a big search for his replacement. . . . Several items mention classmates in education. Dr. **Howard H. Reynolds** (X), head of the Chemical Engineering and Paper Engineering Departments at Lowell Technological Institute, was recently awarded a $3000 grant from the Technical Association of the Pulp and Paper Industry to continue a project on satin white pigments begun last year to improve pigments for paper coatings. . . . Dr. **Paul Gordon** (XIX), with Illinois Institute of Technology since 1954, has been named Chairman of the Department of Metallurgical Engineering. Paul served as a group leader on the Manhattan Project which produced the first atomic bomb. Prof. **Thomas L. Hansen** (IV) wrote that he is a professor of architecture in the Scool of Architecture at the University of Colorado at Boulder. He teaches all the architectural history and one class for seniors in city planning. . . . **Harold Chestnut** (VI-A) wrote that he was scheduled to receive an honorary doctorate in engineering from Case Institute of Technology in June. Hal promised to send along further details, so we'll expect them.

There are five items this month from the business world, and I'll quote the first one verbatim from **Gus Griffin**'s (X) note. "The Griffin Chemical Company now has an affiliate, Eleanor Products, making liquid detergents, etc., for the retail market. We especially recommend our bubbling bath oil." Any wives—and daughters, too—can write to President Gus M. Griffin at 422 Country Lane, Louisville, Ky! . . . Dr. **Roy C. Spooner** (V) has been since 1947 with Aluminum Laboratories Limited, Kingston, Ontario. He is in charge of work in the surface finishing field including studies of anodizing, chemical brightening, and electroplating of aluminum and its alloys. . . . **Wayne J. Holman** (XV-Grad), treasurer and chief financial officer of Johnson and Johnson, New Brunswick, N.J., was the keynote speaker for the Alabama Textile Manufacturers Association's annual meeting at Biloxi, Miss., last May. . . . **James D. Abeles** (XIII) has been president of Purolator Products, Inc., since 1955. He entered Purolator in 1940 as a cost engineer. His headquarters is in Rahway, N.J. . . . Congratulations go to **John S. Hamilton** (X) who has been appointed Vice-president and General Manager of Wear-Ever Aluminum, Inc., subsidiary of Aluminum Company of America.

Two news items came from the US Naval Research Laboratory. Dr. **James H. Schulman** (V) has been appointed Superintendent of the NRL's Optical Physics Division. He is an internationally recognized authority in the fields of phospors, luminescence, optical effects of radiation, and radiation detection. He has been granted 16 patents and has over 76 publications in his fields of research. . . . Dr. **George T. Rado** (VIII), head of the Laboratory Magnetism Branch of NRL, received the laboratory's top scientific award, the 11th annual E. O. Hulburt Science Award, named in honor of the laboratory's first Director of Research.—**Oswald Stewart**, Class Secretary, 3395 Green Meadow Circle, Bethlehem, Pa., 18017

'40

News has been pouring in during this vacation period. **Joe Wiley** writes that he is now president of Fluid Dynamics, a small company located in Morristown, N.J., in the business of designing and manufacturing "high specific performance filters and valves." These articles are designed for extremes of service such as a filter of one half to four inches in line size, constructed entirely of stainless steel and built to handle helium at 600 psi. More recently, valves adapted for use of this type have also been made available. . . . **Divo Tonti**'s work at the New Jersey Highway Authority continues to provide New Jersey with an outstanding highway system. A very attractive brochure comprises the Fourteenth Annual Report of the Authority which operates the Garden State Parkway. As a novel adjunct to the Parkway there is to be built a Garden State Arts Recreational and Cultural Center to be completed in 1967.

It is with regret that I must report the death of another classmate, **Edward Butler Williams,** who did graduate work with us for three years in both Courses VII and X, on September 25, 1963. . . . **Manning Smith,** who received his doctorate degree with us, was honored by the students of Bucknell University by having the yearbook "L'Agenda" dedicated to him. The dedication states in part: "His students know that his door is always open to them and that he is willing to discuss their problems and answer their questions. In addition to his academic interests, he is vitally concerned with the affairs of his community and of his nation." Manning has been a professor at Bucknell since 1946. . . . **Tom Creamer** is again on the move in the banking world; he has been appointed Senior Vice-president of the First National City Bank. Tom started with First National in 1946 after having served two years as assistant to the President of Tech, and four years as an officer in the United States Navy during World War II. He later became assistant cashier in 1947, assistant vice-president in 1950 and Vice-president in 1956. Tom and his wife Phoebe and five children live in Scarsdale, N.Y., where he is trustee of the Hitchcock Presbyterian Church and is also director of the Greater New York Coordinating Committee on Released Time for Religious Education, and, of course, he is also a member of the M.I.T. Corporation Development Committee, as well as being our Class Estate Secretary.

Fred Lange was elected Vice-president of the Atlantic City Electric Company. Fred has been with the company since 1940, when he started out as a junior engineer. . . . **Sam Rabinowitz** is now president of the Hebrew Rehabilitation Center for the Aged in Roslindale, Mass. He also is a member of the Board of Directors of the Brandeis University Associates and is treasurer of the Colonial Provision Company of Roxbury. . . . **Herb Holloman,** who is assistant secretary of Commerce for Science and Technology in the Commerce Department gave the commencement address at Rensselaer Polytechnic Institute last June. Herb was also awarded the honorary degree of Doctor of Engineering. . . . **Ernest Barron,** manager of inventory control of First National Stores, Inc., was a guest speaker at a recent luncheon meeting of the Grocery Manufacturers Representatives of New England in Boston.

Ed Adams has been promoted to patent attorney, director, at Bell Telephone Laboratories in Murray Hill, N.J. Ed has been engaged in patent work at Bell Laboratories since 1945. . . . **Dr. Clinton Powell** has been appointed coordinator, Medical and Health Sciences at the University of California. Prior to that he was associate coordinator. He also has been named one of the three United States representatives to the 15-member International Commission on Radiological Protection. . . . **Frank Bothwell,** who many of you will recall came with us as a freshman when we were all juniors and graduated with us as a senior the next year, is the author of an article "O-R" in Engineering Opportunities. The title of the article is based on the project he was working on in the Pentagon entitled "Operations Research." Actually, Frank is with the Center for Naval Analyses of the Franklin Institute which is cooperating with the Pentagon in Operations Research. He has been with CNA since 1962, and prior to that was director of the Laboratories of Applied Science at the University of Chicago.

As an interesting sideline on a small group of classmates, Admiral **Alfred G. Ward** has supplied the information that all four United States Naval officers awarded M.S. degrees in electrical engineering in 1940 are now admirals on active duty, one with two stars, one with three stars and two with four stars. . . . **Dr. A. M. Aksoy** is now director of Technical Services of Crucible Steel Company International and is stationed with his family in Milano, Italy. . . . **Harry Sedgwick** has been named Director of Engineering for the Dictaphone Corporation. Previously he was manager of engineering standards and design automation at Raytheon, Inc.

Harold Miller is the author of Nondestructive High Potential Testing, published by Hayden Book Company. He has a daughter who is a senior at Smith, and a son who is a senior at New Trier High School, while his wife is a prominent artist in the Chicago area who has won six awards in the last few months. . . . **Elmo Mathews** retired from the army eight years ago as a Colonel and since that time has been executive vice-president of Switzer Brothers. . . . This being an off year, our representatives at Alumni Day were few, those attending being Mr. and Mrs. Bob Bittenbender,

Mr. and Mrs. Russ Hayden, Dan Karp, Ted and Edith Kingsbury, George Kosco, Phil Stoddard, and Mr. and Mrs. Arnie Wight. . . . **John Leschen** received a Master of Science degree from Rensselaer Polytechnic Institute in June. . . . From **John Burr** comes the following note: "Have just returned from a year at the University of Cambridge, England, during which we had children at George August Univ., Gottingen, Germany; Univ. of Bordeaux; two at University College, Dublin; and one at Loretto College, Dublin, as well as two small boys at Newnham Croft primary school in Cambridge. Are pretty well over the reentry phase of the return."—**Alvin Guttag,** Secretary, Cushman, Darby & Cushman, American Security Building, Washington, D.C. 20005

In Concord, Mass., in 1939, Walter Lob, '41, is shown standing to the left of the glider. Teddy F. Walkowicz, also '41, is in the cockpit.

'41

The above photograph was taken in 1939 and was found accompanied by a local newspaper clipping of the same vintage carrying an interesting account of glider activities of M.I.T. students. By coincidence, the same clipping also carried a headline article of the 1939 Hitler pronouncements on the take-over of Poland in the start of World War II. These are reminiscences particularly appropriate in this 25th reunion year.

As those who attended will gladly tell you, the 25th Reunion which was held on the M.I.T. campus June 9 through 12 was a most enjoyable and stimulating event. One important observation was the surprisingly youthful and well preserved appearance of the '41ers and their wives. Another pleasant observation was the fine geographical representation from all over the United States as well as Canada, Mexico, France and Spain. While some attended only selected Reunion events such as the Reunion Banquet and Dance, most registered for both the Reunion and the Alumni Day ceremonies which followed the Reunion. Most brought children as well as wives. Ages of children accompanying their parents ranged from 6 to 22 years, and they enjoyed both programs and housing separate from their parents.

Those registering for both the Reunion and Alumni Day were: Bud Ackerson, Herm and Mrs. Affel, Bob Bailey, Gerry and Mrs. Bartlett, Ed and Mrs. Beaupre, John M. and Mrs. Biggs, Robert Wallace Blake, Robert Wilson Blake, George and Mrs. Boettner, Joe and Mrs. Bowman, John and Mrs. Brannan, Paul and Mrs. Carlson, Ivor and Mrs. Collins, Ralph and Mrs. Delano, Joe Dietzgen, Mike and Mrs. Driscoll, Bob and Mrs. Edwards, Martin and Mrs. Ernst, Rog and Mrs. Finch, Lew and Mrs. Fykse, Herm and Mrs. Gabel, Carl and Mrs. Goodwin, Jim and Mrs. Gordon, Adrian J. Grossman, Paul and Mrs. Joyce, Erling Hustvedt, Joe and Mrs. Kalman, Walt Kreske, Bill and Mrs. Kussmaul, Dick and Mrs. Lazarus, Jack Ludwig, John and Mrs. MacLeod, Dave and Mrs. McNally, Ed and Mrs. Marden, Stan and Mrs. Marple, Earl and Mrs. Meyers, Kirk and Mrs. Miller, Cliff and Mrs. Moffet, Carl and Mrs. Mueller, John and Mrs. Murdock, Ed and Mrs. Murphy, Joe and Mrs. Meyers, William F. Orr, Lloyd Perper, Frank and Mrs. Phillips, John and Mrs. Potter, George and Mrs. Power, Nat and Mrs. Sage, Max and Mrs. Schweinshaut, Norm and Mrs. Shapira, Bob and Mrs. Smith, Pete and Mrs. Smolka, Ken and Mrs. Spaulding, Irv and Mrs. Stein, Carl and Mrs. Stewart, Larry and Mrs. Turnock, Chuck and Mrs. Wales, Ted and Mrs. Walkowicz, Jack and Mrs. Wallace, John and Mrs. Waller, Fred and Mrs. Watriss, D. Reid and Mrs. Weedon.

Others attending one or more events include: Hank Avery, Johan M. Andersen, Bill Folberth, James Gordon, Lester and Mrs. Gott, Luke and Mrs. Hayden, Dave and Mrs. Howard, Luis and Mrs. Jiminez-Michelena, Leonhard and Mrs. Katz, Herb and Mrs. Klein, Mitch and Mrs. Marcus, Stan and Mrs. Marple, Jr., Will Mott, Carlton Stewart, Alan Surosky, Charles Townes, Arthur and Mrs. Weinberger, Frank and Mrs. Wyle, Leona and Mr. Zarsky, George Newton, Jr.

At the business meeting on Saturday of the Reunion, the following Class Officers were elected for a five-year term: President—**Ed Marden;** General Vice-presidents—**John MacLeod, John Anderson, Mich Marcus** and **Reid Weedon;** Regional Vice-presidents—**Carl Mueller** and **Ted Walkowicz,** New York area; **Kirk Miller,** Washington, D.C., area; **Joe Dietzgen** and **Dave McNally,** Chicago area; **Bob Smith,** Philadelphia area; **Hank Avery,** Pittsburgh area; **Bill Folberth,** Ohio area; **Frank Wyle,** West Coast area; Treasurer—**Fred Watriss;** Secretary—**Walt Kreske;** Assistant Secretaries—**Bud Ackerson** and **Mike Driscoll;** Local Standing Committee—the officers and **Ed Beaupre, Dave Howard, George Newton, Nat Sage, John Sexton, Irv Stein** and **Leona Zarsky.**

We owe a vote of gratitude to Reunion Committee Chairman John MacLeod and his entire Reunion Committee for the splendid job they did in planning, organizing and carrying out the Reunion Activities. Also, Reunion Gift Chairman, Carl Mueller, through his solicitations, has made the Class look very good indeed by the more than $350,000 Class gift to M.I.T. Among the outstanding mementoes of the Reunion is a Reunion Classbook compiled by Mich Marcus and which carries biographical excerpts of individual members. Mich reports that extra copies of the book (at $10), reunion jackets (at $10), and hats and bags ($2.50 each) are available through him at 144 Bigelow Road, West Newton, Mass.

Mike Driscoll has confirmed the wonders of modern medical science. Those of you attending the Reunion will remember seeing him limp about with what was reputed to be a fractured foot. Shortly after the Reunion he entered the hospital and lo and behold his problem was really diagnosed as a cracked disc!! Fortunately surgical removal of a small piece of bone was successful and Mike is out and about again as good as new. . . . **Robert W. Blake** has been elected President of the American Club of Bordeaux, France. He is associated with Pan American World Airways in France. . . . Dr. **Stanley Backer** was appointed to the executive committee of the Textile Engineering Division of the American Society of Mechanical Engineers at a meeting in Charlotte, N.C., recently.

Dr. **Charles W. Sauer** has been named director of research administration at Textron's Bell Aerosystems Company. Prior to joining Bell Aerosystems, he was with the Missile and Space Systems Division of Douglas Aircraft Company, Inc. for the past three years. He has also been business manager for the Energy and Materials Division and member of the Vice-president's staff with the Arthur D. Little, Inc. where he managed programs involving micro-chemistry, crystallography and solid state physics, explosives and propellants. . . . Professor **Gardner M. Ketchum** has received the annual distinguished service award for 1966 given each year by the Society of Alumni of Union College under selection of the Alumni Council to a faculty member. The award includes a citation and a $250 cash grant. He will be cited for his leadership in working out a new program for his department, the mechanical engineering department, of which he is chairman. The new program in mechanical engineering puts emphasis on the creative and inventive aspects of the subject. Largely as a result of it, Union's student chapter of the American Society of Mechanical Engineers has won three straight regional competitions for student research, plus a regional and national competition for written research papers by undergraduate engineers.

Peter Horton, 1131 Donaire Way, Pacific Palisades, Calif., is now doing long range planning for the Douglas Missile and Space Systems Group of the Douglas Aircraft Company. . . . **Arthur L. Covitt,** 3324 Middlefield Rd., Palo Alto, Calif., is now a senior engineering specialist at Sylvania Electric Products, Inc., Mountain View, Calif. . . . Captain **Havilah Hawkins** is making a name for himself, as well as a living, being a windjammer operator. He owns the Mary Day, an 83 foot schooner of his own design. She sleeps 28 passengers and a crew of five, his wife, two sons and himself. The schooner sails out of Camden, Maine, winters in Buck's Harbor and between seasons is anchored in the Benjamin River. Havilah reports sailing at capacity throughout the summer until September at $125 per person. Passengers come on board on Sunday and debark the follow-

ing Sunday. Previous to this, he has owned the schooners Wentworth and Taber.

Professor **Robert M. Fano,** director of the Project Mac at M.I.T., has recently stated that Multics (multiplex information and computing service) will be able to accommodate 150 real time on line users simultaneously by the first half of 1967. This is a five-fold increase over the 30 it can now handle. . . . **Joseph A. Bergantz** is professor and head of the Department of Chemical Engineering, State University of New York at Buffalo. . . . Dr. **Albert C. Zettlemoyer** has been presented the Honor Scroll of the Philadelphia AIC Chapter as a distinguished member of the fellowship of science and of education. He had previously been named one of the two editors-in-chief of the Journal of Colloid and Interface Science. He is assistant to the president and director of the Center for Surface & Coating Research at Lehigh. . . . Mr. & Mrs. **Daniel F. Flowers** announce the birth of a son Joseph Knowles Flowers on April 28, 1966.—**Walter J. Kreske,** Secretary, 53 State Street, Boston, Mass.; **Everett R. Ackerson,** Assistant Secretary, 16 Vernon Street, South Braintree, Mass.; **Michael Driscoll,** Assistant Secretary, City Hall, Nantucket, Mass.

'42

Recently **Bob Rines** wrote me a most interesting letter on the plans for our 25th Reunion. The letter was so interesting that I am including a large part of it in these notes. "We have received indications from 210 classmates that they probably will be coming to the Reunion alone, 73 with their wives and 47 with their wives and children. This means 141 classmates have indicated their interest in attending the reunion up to this time. Breaking this down a little further, they have indicated a total of 122 children with the largest number being in the mid-teens, a sizable grammar school group and a surprisingly sizable 19 through early 20's group. We have had 116 responses to the effect that these classmates will not be able to attend.

"A considerable registration fee in money to be applied to the Class Book (and thus not returnable) has been received and I have started a bank account which we will turn over to the ultimate treasurer. Within the next few weeks, I hope to meet with **Lou Rosenblum** and zero in on the several committees around the country. In this connection, a number of classmates have offered to work on committees and we hope more volunteers (including wives) will come forward when they hear about our plans. Thus far we have not had to put a strain on anybody and I think that if we continue at this pace, enlisting the aid of sizable committees all over the country for follow-up and various details, we can be ready long in advance of the last minute and can leisurely plan a very exciting and rewarding Reunion. One of our secretaries, Mrs. Nixon (868-8650) is extremely helpful in monitoring the reunion plans to date in collaborating with Lou Rosenblum's secretary, and can be reached if you have any questions. My daughter, Suzi, is planning to give me several weeks in August in connection with letter writing and follow-up on the registration fees.

"Of newsworthy note are the following responses: Mr. **S. Edward Yoder** from Bombay, India, expects to come with wife and 7 and 11 year old children; **Gordon Hill** expects to come from Honolulu with wife and 12, 16, and 18 year old children; **Ricardo Zuloaga** expects to come from Caracas, Venezuela, with wife and 9, 13, 14, 17, and 19 year old children; **Nanubhai B. Amin** who resides in Baroda, India, plans to come with wife; **Charles R. Stempf,** expects to visit us from Australia; **Erwin Anisz,** expects to come with his wife from Mexico City; **George M. Watters, Jr.,** expects to attend with his wife from Tokyo, Japan; and **Victor Keilhauer** plans to visit us with his wife and 16 and 18 year old children from San Salvador, Central America."

I am sure that you will agree that this is an excellent report and indicates that we are going to have a truly memorable Reunion. Volunteers, please step forward. Let either **Bob Rines** or me know of your willingness to help. You won't have to work too hard and what work there is I am sure will be most pleasant.

The Boston Globe recently wrote an article on Smithcraft Corporation in Chelsea. **John Cantlin** became President of the company on June 1st. His job is to increase the current $10 million lighting fixture business to a $25 million sales goal within ten years. Good luck, John. . . . **Bob Van Tuyle** has been elected President of the Drew Chemical Corporation. . . . **Al Clear** has been appointed Vice-president, Sales Coordination, for the consumer division of Stanley Works. . . . **Bob Fabacher,** Vice-president, Director of Marketing, Jackson Brewing Company, has been named to the Sugar Bowl Committee. . . . **Bernie Levere,** who is President of the Macbern Construction Corporation of New York, has been appointed to the Board of Adjustment of the town of Teaneck, N.J.

At Alumni Day a number of classmates left notes for this column, and I reproduce them below. **Fred Gander:** "Oldest son (Frederick, Jr.), M.I.T. '65 now at Wharton Graduate School. Second son (Craig) has been accepted for class of '70 and will register in electrical engineering in September. Looking forward to a great 25th." . . . **John Schmidt:** "I've given up my country living in Boxford, Mass. and am now a cliff-dweller within sight of Washington, D.C. being able to walk to the office is one of the advantages here. I am still with the Center for Naval Analysis in the capacity of Project Director on Operations Analysis and System Evaluation Studies for the Chief of Naval Operations." . . . **Ed Gartland,** Jr.: "A fledgling commercial building constructor, 19 months old. After 16 years at Star Market Company as chief engineer and having conceived and executed the first air rights supermarket in the country built over the Mass. Turnpike at Newtonville. I have gone into business on my own." . . . **Dick Gillooly:** "Am project engineer on Gemini at McDonnell Aircraft. Having a great time on this project. Plan to see you next year."

This summer I received a letter from **Dick Russell.** "Just a few notes to keep the home front and my classmates abreast of my whereabouts since it has been some time since I have written. Aside from a brief period in the Army, including production control at Watertown Arsenal, I have been engaged in the rod wire sheet and tube business since school. Babcock & Wilcox, Chase Brass and Copper, Stamford Rolling Mills, J. Bishop & Company, Superior Tube Company and now Fine Tubes Limited in Plymouth, England, have provided a variety of experiences—not the least of which is this current assignment in England. Fine Tubes is a subsidiary of Superior Tube Company and I came over here to help out until we find a new Managing Director—'sorting things out' I believe is the expression I hear most often over here.

"Currently we have three children, one and a half grandchildren, a great grandmother, three cars (including a Rover two litre right-hand drive) all spread over two continents. Living right on the edge of Dartmoor I am marketly getting Anglicised in spite of my Boston accent and enjoy Tintagel Castle, Stonehenge, Shakespeare, pubs, sailing on the Channel, wild moor ponies and British trade union negotiations. These are a wide contrast to the Pennsylvania Dutch and to we New Englanders, even though here in Plymouth the 'Mayflower' set sail from surrounding towns called Truro, Amesbury, Exeter, Salisbury, Falmouth, Dartmouth. In spite of the contrast, I feel very much at home. I thoroughly enjoyed the 1962 reunion and I hope to get back in time for 1967—I have to "

Ken Brock, Director of the Alumni Fund, asked me to report the Class Reunion gift totals as of June 1, 1966. Our class is credited with $125,757. By way of comparison, the class of 1941 reached a total of $354,900, with a record having been set by the class of 1935 with $641,-656.—**John W. Sheetz,** 3rd, Secretary, 45 Rutledge Rd., Belmont, Mass. 02178.

Albert F. Clear, '42

'43

A lot of news has come in during the summer months, and here it is. **Frank R. Borden** was designated a Fellow of the National Microfilm Association. He is responsible for policy and technical planning for the Engineering Data Microreproduction System (EDMS) of which he

is the coordinator for the Electronics Command, Technical Data and Standardization Division, Procurement and Production Directorate of the U. S. Army Electronics Command (formerly the Signal Corps) at Fort Monmouth, N.J. He holds membership in the American Ordnance Association, the American Society of Mechanical Engineers, the American Society for Quality Control and other technical and professional associations. . . . We received news about **Bob Rorschach** through the Oil & Gas Journal. Bob is a process consultant, specializing in gas processing, refrigeration and energy-conversion systems. For the past two years he has been associated with the consulting firm of Netherton-Dollmeyer-Solnok, Tulsa. Previously he was supervisor of new process development for A. O. Smith Corp., and a senior process engineer with Warren Petroleum Corporation. He has published several papers on his specialties, and holds a patent on a low temperature refrigeration process. Bob received B.S. and M.S. degrees in chemical engineering from M.I.T. in 1943 and 1950, and an M.S. degree in petroleum refining from the University of Tulsa in 1947. He is a member of AICHE, ACS, NSPE, and OSPE. He is also a registered professional engineer in Oklahoma and Texas. . . . Dr. **Fumio Yagi** became the staff head of the Systems Analysis and Integration Section at Grumman Aircraft. He is also Adjunct Professor of Mathematics, C. W. Post college, and a lecturer in mathematics, Adelphi University. . . . Dr. **Marjorie K. Smith** wrote that she keeps busy with in-service and new training courses for the New York City School Health Bureau of the Health Department. She also acts as a part-time physician for Hunter College. . . . Capt. **Charles E. Columbus**, who now lives in Indiana, wrote as follows: "Upon retirement from the U. S. Coast Guard after completing 30 years service, I received an appointment as Associate Professor, Mechanical Engineering Technology, and as Section Chairman, Industrial & Mechanical Engineering Technology, Purdue University, Calumet Regional Campus." . . . **Gene Morrison,** of Middletown, N.Y., wrote that he just finished a year as Chairman of the Trust Division of the New York State Bankers Association. He is President of the Orange County Trust Company in Middletown, and, as many of you know, the golf champion of our class. . . . **Larry Stewart** wrote, "I was appointed Corporate Director-Program Management at North American Aviation, Inc. I joined Management Planning, Corporate Staff, in November, 1965. I have been with the company since 1951." He lives in Pacific Palisades with his wife, Rosemary, daughter, Suzanne (10) and son, Stephen (7). . . . **F. Curtis Smith** has become Administrative Coordinator in the Manufacturing Department of American Oil Company. He joined the company in 1946 as a chemical engineer in technical service at Whiting, Ind., and later became a group leader. He transferred to the Manufacturing Department in 1951 as an Assistant General Foreman at the Whiting refinery. In 1953 he moved to Chicago as an Assistant Supervisor and then was made Supervisor. He has been Assistant Manager of capital expenditures and process planning in the Manufacturing Department since 1961. . . . **Robert F. Street** is a member of a newly-formed partnership—Street & Lundgren, Architects, Professional Building. Aberdeen, Wash. . . . **Theodore Cale,** Jr., who lives in Holland Patent, N.Y., wrote that his "oldest son is at M.I.T., a member of the class of 1969." His son was born at Westgate West in 1947, "which may have had some subtle influence." . . . **Morrie Seiple** has been active in Newport, R.I., town financial matters for many years. He has been the Chairman of the Town Personnel Committee since 1963 and was a member of the Pension Plan Study Committee from 1961-1963. He is also a member of the Middle School Advisory Committee, and has been Chairman of the Budget Committee since 1960. He is head of the Fleet Services Department of the Naval Underwater Weapons Research and Engineering Station in Newport. . . . Dr. **Stewart Fletcher**, who received his doctorate with our class and is Vice-president and Technical Director of Latrobe Steel Company, Latrobe, Penn., was the principal speaker at the Spring Regional Meeting of the American Society for Metals in Lansing, Mich. . . . **John Gardner, Jr.,** Manager of Manufacturing Planning of Humble Oil & Refining Company, became General Manager of the Corporate Planning, Economics, and Manufacturing Department of Esso Africa, with headquarters in Geneva. He joined Humble in 1943 and served in various technical and supervisory positions at the company's Bayway Refinery at Linden, N.J., before moving to Houston in 1961 to join the Headquarters Manufacturing Department. . . . **Newt Steers** is running for Congress in Maryland's newly created 8th District. Newt is a graduate of Yale College and of Yale Law School as well as M.I.T. He has served with the U. S. Atomic Energy Commission. He is almost certain to win the Republican nomination at the primaries in September, and will probably also win the election in November. . . . **Joseph A. Polack** has been appointed Director of the Baton Rouge Esso Research Laboratories of Humble Oil & Refining Company. A native of New Orleans, Joe received the B.E. degree from Tulane and the S.M. and Sc.D. degrees from M.I.T. He began his career with Humble in 1948 as an engineer at the local Esso Research Laboratories. As he advanced through the organization, he served as group head and section head at the laboratories. Then in 1958 he was named an Assistant Director of the laboratories. From September 1961 to March of 1963 he was on a rotational assignment as assistant to the Manager of Research at Humble's Houston Headquarters Research Department. He returned to his position as Assistant Director of the local laboratories and remained there until January 1 of this year, when he was named to his present position in the refinery's technical division. Joe is associated with a number of professional and civic organizations, including the American Institute of Chemical Engineers, Citizens for Good Government, the budget council for the United Givers—Baton Rouge Area, and the Capital City Kiwanis Club, where he is Chairman of the Public and Business Affairs Committee. . . . Retired Rear Admiral **William A. Brockett** has been chosen President of Webb Institute of Naval Architecture in Glen Cove, N.Y. The institute is the only fully-accredited college in the U.S. devoted exclusively to naval architecture and marine engineering. Its carefully-selected students are accorded full scholarships covering tuition, room, board, books and supplies. Brockett, 52, retired from the top ship engineering job in the Navy this year. He received his master's degree in marine engineering with our class.

I received about 50 change-of-address notices during the last four months, none of which I will report here. I will, however, report that Class President **Jim Hoey Jr.**, has started work on the 25th Reunion and is conducting a survey of classmates to determine whether it will be held on campus in the dormitories or at a fine new motel within ten miles of M.I.T. We have less than two years to complete our 25th Reunion gift commitments. **Ned Swanberg** has things going along smoothly, but there is still a lot of work to be done.—**Richard M. Feingold,** Secretary, Ritter & Berman, 266 Pearl Street, Hartford, Conn., 06103.

'44

I hope you all had a pleasant summer. As usual for the first issue of the publication year we have the accumulation of not one but four months of clippings and other precious material. In addition I am now in the process of updating these November notes to give you news of the Class of 1944 generated by the seventh Alumni Officers Conference held September 9-10 on campus. The most significant news item is the agreement of **Burt Bromfield** to serve as Chairman of the 25th Reunion Committee. He was appointed September 9 by Class President **John Hull** at a meeting of class members present for the Conference. It is presumed that the reunion in 1969 will be held on campus with all facilities made available by the Institute, the traditional privilege of 25th year classes. **Scott Carpenter,** who has served as chairman of past reunions and is presently a member of the general Alumni Association Reunions Committee, is now living in Chicago. In view of the great advantages of having the 25th Reunion Chairman in the Cambridge area, President Hull is most pleased to have Burt's agreement to serve. Class Agent **Norman Sebell** is continuing to serve as 25th Reunion Gift Chairman. Discussion of the 25th Reunion and other class matters proceeded King Arthur style around a circular table in the Baker Residence Hall Dining Room while other more casual members of the Conference looked down occasionally from the balcony above. Present at the round table were President **John Hull,** Ivyland, Pa.; Alumni Council Representative, **Peter L. Ouattrochi,** Warwick, R.I.; Class Agent, **Norm Sebell,** Lexington; **Burt Bromfield,**

Weston; **Stanley Warshaw,** Newton Center; **Robert Jevon,** Lincoln; **Robert Meny,** Rowayton, Conn.; **Peter Matthews,** Needham; **E. Alfred Picardi,** Highland Park, Ill.; and your Secretary. Other class members present at the Conference but presumably attending meetings of the Long Range Planning Committee, being held concurrently with our informal class round-table discussion, were **Robert S. Faurot,** Chicago, Ill.; **Jack H. Frailey,** Concord; **Robert V. Horrigan,** Penn Yan, N.Y.; **Robert M. Ilfeld,** Wellesley; **Martin King,** Fairlawn, N.J.; and **Edwin L. Moyer,** Jamesville, N.Y. The Conference began with dinner for early arrivals at the Faculty Club on Thursday, September 8. A general session was held on Friday morning in the Kresge Auditorium, followed by luncheon in the Stratton Student Center Building. Next came workshops Friday afternoon in the Stratton Building, dedication of the Harold Whitworth Pierce Boathouse by Chairman of the Corporation, Dr. James R. Killian, Jr., on late Friday afternoon, and dinner Friday evening in Walker Memorial with an address by M.I.T.'s new President, Dr. Howard W. Johnson. On Saturday morning a general session was held in the Cecil and Ida Green Earth Sciences Building with six lectures ranging from "Chemical Engineering in Medicine: the Artificial Kidney," to "The Politics of Outer Space." The Conference concluded with luncheon at the Faculty Club and a talk by Mrs. Karl T. Compton introduced by Alumni Association President Theodore A. Mangelsdorf as the "Queen Mother of M.I.T." The Conference was a well-organized, smoothly conducted affair which showed a desirable shift toward greater involvement, participation, and feedback by the conferees compared with the two immediately preceding conferences of 1964 and 1965 which I attended. The Conference is held for Class and Club Officers, Educational Council members, and Alumni Fund workers from solicitors to regional and special gifts chairmen. Any member of the class saying "yes" when asked to serve or exercising any initiative toward greater participation in alumni affairs should soon qualify for attendance at the Conference. The regional fund drives which are organized in January or February of each year provide an early opportunity for tangible service to the Institute. It may be that some members of our class who contribute early and regularly are never contacted by the regional organizations and do not know of their existence. If you wish to serve in this way and do not know who to contact locally, write a card to Kenneth Brock, Director of the Alumni Fund, Cambridge, or tell me of your interest. The Alumni Officers Conference should be distinguished from the Alumni Seminar which starts when the Conference ends and runs for two and a half days. The seminar, for which tuition is charged, is open to all alumni and their spouses.

While in Cambridge I met John I. Mattill, the new Editor of The Review, also Class Notes Editor Janet Leslie and her successor, Mrs. Freda Rich. You may have noticed that there were no notes for this class in the June Review. June notes were submitted by **Jack Barmby,** but by a combination of circumstances and errors in Cambridge they appeared not in June but as an undesignated part of the July notes, starting with the paragraph beginning, **"Warren H. Howard** was elected . . ." and including the material on **Richard Kulda,** plus the news of **Lee Eagleton** and **Dave M. Himmelblau** contributed by courtesy of **Chet Woodworth.** I mention this here because I believe the proper person should be credited with the material (in this case Jack Barmby) and because I believe that you deserve an explanation when there are no notes. . . . Let's turn to the material received since the July notes were written. **Paul Heilman** wrote to me after Alumni Day, June 13, to report on our class turnout. **Peter L. Quattrochi** was there with his wife Eleanor. Peter established himself as a management consultant about a year ago, says he is now very busy and enjoys his work immensely. . . . **Robert J. Horn, Jr.,** and his wife were at the Alumni Day Dinner. Bob is a lawyer with Kenway, Janney, and Hildreth in Boston. He has done patent work for the Institute and has been successful in several litigations on the Institute's behalf. . . . The **Samuel C. Morrisons** were there for the full day. From Cambridge they were to vacation for three or four days on Cape Cod prior to returning to New London where Sam is with Electric Boat. . . . Others on the registration list furnished by the Alumni Office are **Thomas F. Dolan,** Mr. nnd Mrs. **Tan C. Lu,** Mr. and Mrs. **Joseph J. Snyder,** and **Jill DeAmicis Witherell** (Mrs. Dana). I met and had an interesting discussion with Jill's father-in-law, Percy W. Witherell, '99, at the luncheon on September 10. Mr. Witherell is Secretary of his class and representative on the Alumni Council. You may wish to read his notes for the Class of 1899 in this issue. Let me see if I have this right, Jill. When you married Dana Witherell, your M.I.T. father-in-law didn't lose a son, he gained an M.I.T. daughter. . . . That concludes **Paul Heilman**'s report on Alumni Day along with my Officers Conference sequel. In the latter part of August, Paul and I met at the Pentagon. He arrived at my office just in time for an intellectual showerbath in the form of a lecture on "present value analysis" by Keith Broman, Professor of Finance from the University of Nebraska, who was serving his annual two week tour as a Navy Reserve Officer. Afterwards we adjourned for some food and discussion at the Officers' Athletic Center where **Burt Bromfield** and I had met 11 months earlier (see the December 1965 notes). Recalling the arrangement of that period I asked Paul if he was ready to take back the job of secretary, and he said he was. A week later he wrote that a review of the available time showed that it would be impossible for him to take over as secretary as tentatively agreed but he would be willing to act as assistant secretary. Paul says he would rather do a good job on an occasional basis than a poor job consistently. Paul did a good job for six years and I know he would do a good job again. I received his letter with mixed emotions because these notes are a lot of work, although they are becoming somewhat easier for me to write. I may already be overcommitted inasmuch as I am to teach "Systems Analysis" (for computer applications) at the Northern Virginia Community College at least one night a week during this coming year. I believe that the class notes workload can be shared and I look forward with pleasure to working with **Paul Heilman, Jack Barmby,** and anyone else willing to participate.

Now to the notes from classmates via the Alumni Fund envelopes. Starting in New England and working generally South and West puts an M.I.T. couple at the top of the list. **Katherine Adams Kulmala** (Mrs. Tuure T.), Russell St., Carlisle, Mass., writes, "Two ends of the city-planning spectrum today are conservation and social integration. Torsti (IV-B, '53) and I pursue both after hours as well: our country place takes effort to conserve and our many Finnish guests integrate beautifully with Americans in our sauna!" Well, Kay, you have a way with words. Are you involved in any "new town" planning? (Reston is in Fairfax County, Va., where I live.) What did you think of the June issue of The Review devoted to "The Urban Challenge"? . . . Cdr. **Kenneth S. Brown,** Masons Island, Mystic, Conn., writes, "This Course XIII-A student is still a Naval architect, making numerical control applications at the Electric Boat Division of General Dynamics, Groton, Conn. Our punched paper tape makes pretty drawings." That sounds to me like computer aided design. I'd like to hear more about that, too. . . . **Paul Heilman,** writing earlier from Westport, Conn., said that he had been quite busy. He has seen **Robert Benedict** and **Lew Tyree** recently. . . . **Gay V. Land,** 90 Broad St., New York, N.Y., took a moment to tell of his present affiliation as Vice-president for Corporate Planning and Development of Southern Natural Gas Company (see July notes). . . . **Hobart L. Swan,** 402 Moylan Ave., Moylan, Pa., writes that he is still with Scott Paper. He says, "I recently moved from Procurement Manager on the West Coast to Manager, Technical Employment at Staff Headquarters, Philadelphia, Pa. We have five children: girls 17, 16, and 15 and boys 13, and 3. All are well. I would like to see any classmates passing by." . . . Next on the list is **R. Stanley LaVallee,** 4713 Dolphin Lane, Alexandria, Va. He writes, "I transferred in 1965 from Tech Ops in Burlington, Mass., to their Combat Operations Research Group (CORG) at Fort Belvoir, Va., where I am now Assistant Director—Technical." This makes Stan a neighbor so I called him. I learned that he like Hobart Swan, has five children, ages 16, 14, 12, 8, and 4, but all boys. His bride of 20 years is the former Carol Carter of Iowa. Stan is really just coming home. He graduated from Central High School in the District of Columbia. . . . Moving farther south, we hear from **Alden A. West,** 1208 Riverside Drive, Newport News, Va., who writes, "I am starting my fourth year as Tidewater District Manager for G.E.

Have been completely converted to a Virginian as have Betty and family. Our oldest daughter, Nancy, 19, is starting her junior year at William and Mary College." He also says he was promoted last year to Lt. Col. in the Air Force Reserve and "will be attending the National War College this summer. I have an 'M-Day' assignment with the Office of Aerospace Research." Alden expects to attend the 25th reunion in 1969. . . . From Oak Ridge, Tennessee, we learn that Dr. **Wilfred M. Good** is on leave for two years from the Oak Ridge National Laboratory. His present address is T.A.E.A., Room 444, Vienna, Kaerntnerring, Austria. . . . We have another classmate planning for 1969. **Trigg Noyes,** 1189 Indian Mound Road, Lexington, Ky., who is apparently still with IBM as shown in the 1961 Alumni Register, writes, "We are enjoying Kentucky more each year. We see **John L. Dawson, Jr.,** and **James R. Kane** in Louisville occasionally. **William G. Abbot, III,** is now in Grosse Point, Mich. We are looking forward to the 25th Reunion." . . . **Frank E. Carroll,** 924 S. Delphia St., Park Ridge, Ill., invites classmates or others passing through Chicago who would like to renew the acquaintance to call him (res. 823-0348, bus. SP5-5080). Frank has six children, two girls and four boys. As a civic activity Frank notes that he is chairman of a Boy Scout Troop. Under "Business" Frank enters the following: President of Decks, Inc., Chairman of Steel Decks, Inc., Chairman of Decks, Inc., of Florida, and Chairman of Wall Span, Inc. The above firms are in engineering and construction. Thank you for the invitation, Frank. Incidentally, Frank belongs to the Union League Club of Chicago, Rolling Green Country Club, and Toastmasters, International. . . . **Henry N. Bowes,** 3102 Bayou Drive, LaPorte, Texas 77571, writes, "I have transferred to Lockheed's new Houston Aerospace Systems Division as manager of Guidance Control and Simulation Department working with the NASA Manned Spacecraft Center on the Apollo program." . . . **Victor Stanley,** 3412 Corinth Ave., Los Angeles, Calif., says **John F. Christie, Peter F. Leone, Michael H. Pelosi, Jr., Donald R. Pressey,** Robert Laferty, '47, and himself had a "20-year reunion" last year. All were Navy V-12 located in the Graduate House, and all except himself live in the Philadelphia area. Vic has lived in Los Angeles, since 1949. Thank you for those notes. . . . We turn now to the clippings. From the Worcester (Mass.) Gazette of April 4 we learn that **Norman L. Greenman** of Woodstock, Mass., has been elected President and Chief Executive Officer of Rogers Corporation. Norm joined Rogers as a development engineer in 1948 and became a director and Vice-president in 1964. He holds bachelor's and master's degrees from Tech. Rogers Corporation, which operates factories in Dayville and Manchester, Mass., and in Willimantic, Conn., manufactures Mektron molded circuits, Nitrphyl floats, synthetic rubber components, and plastic materials. . . . **John G. Floden,** a lifelong resident of Rockford, Ill., and an engineer with the Barber-Colman Company, was one of four candidates for two posts on the Rockford Board of Education in elections held April 9, according to a story which appeared in the Rockford Register-Republic three days before the election. I do not have information at this writing of the outcome. John, can you bring us up to date? John is active in the Chamber of Commerce, is a former Chairman of the Board of Deacons of the Second Congregational Church, and a past president of the Rock River Chapter of the ASME. An issue in the campaign appears to have been federal aid to education. John advocated a strong board, free from outside control which he sees as implicit in reliance on federal aid. One of his opponents who was the leading vote getter in the previous campaign advocated utilization of all available sources of revenue, including federal aid. . . . **Richard C. Grant** has been appointed Northeast Regional Production Manager for the United States Envelope Company, according to a story (with photograph) which appeared in the Springfield (Mass.) News of July 21. Dick joined USE in January 1964 as a production engineer. In June of that year he was named manager of the Company's Williamsburg, Pa., plant which produces embossed stamped envelopes for the U.S. Post Office Department. . . . **Ahmad Yekta** has been appointed Deputy Chancellor to the National University of Iran, according to a story in a Teheran newspaper of July 4. After his graduate work at M.I.T. Ahmad worked for some time in the University as Deputy to the Chief for the Computer Department. Among other posts which he has held is that of Deputy Chairman of the Board of Directors of the Iran Telephone Company. . . . **Sanborn C. Brown,** whose name appears frequently in this column by virtue of his diversified interests, activities, and accomplishments, is mentioned in the Bulletin of the American Academy of Arts and Sciences for May in connection with an exhibit of the Rumford Historical Association held last summer in Woburn, Mass., at the birthplace of Count Rumford. The Rumford Exhibit includes models of the apparatus used by Count Rumford in his most famous theoretical discoveries. The models were originally constructed for the American Academy by Professor Brown. Count Rumford was both a theoretician of heat and light and a practical inventor. . . . **Walter Hanstein, Jr.,** had joined Automation Engineering Laboratory, 84 Commerce Rd., Stamford, Conn., as Vice-president, according to a news release of June. (See the Class of '48 notes in the July issue of the Review for an interesting write-up on AEL and its president.) Walter will be in charge of technical implementation for AEL Development and Research, Inc. From 1952 until joining AEL, Walter had been with Burroughs Corporation where he was Manager of Engineering, Special Products Engineering Division. He had directed systems development for new products involving high speed printers, optical character recognition, forms handling equipment, integrated circuits, and other advanced mechanical and electro-mechanical devices. . . . We are advised by a press release of May 23 that **Caleb S. Taft,** 1629 Spotswood Dr., Bloomfield Hills, Mich., has been appointed as Vice-president and Executive Assistant of American Metal Products Company. The Executive Assistant part of the title is new. Caleb joined AMP in 1964 as Vice-president of Manufacturing for the Automotive Division. In the newly created position he will be concerned with the expansion of plant facilities for the Automotive Division as well as other divisions and subsidiaries of AMP. . . . An article in the Lawrence (Mass.) Eagle-Tribune of February 2 (it's still news if you haven't heard it) states that **Edward W. Turner, Jr.,** has been appointed Assistant Secretary of Factory Engineering and Test Set Design at Western Electric Company's Merrimack Valley Works in North Andover, Mass. . . . That's all the clippings and press releases.

I have just received a note from the editors of the Review that four M.I.T. Alumni are included among the 45 Sloan Fellows who are at M.I.T. for the 1966-67 executive development program in the Sloan School of Management. One of the four is **Robert M. Ilfeld,** President of Quick Plastics Company. Bob is the first company president to enroll in the program's 28-year history. He is the son of Max L. Iffeld, '24.

The following changes of address have been received in the last month. They are arranged geographically from East to West and include the previous post office if changed: **Capt. William C. Hushing,** USN, XIII-A, Portsmouth Naval Shipyard, Portsmouth, N.H. 03801 from Kittery, Maine; **Richard Soderberg, Jr.,** XVI, 420 Greenley Rd., New Canaan, Conn. 06840 from Houston, Texas; **Courtney H. Reeves,** X, 43 Pheasant Run, Wilton, Conn. 06897; **Samuel D. Parkinson, II,** Ridge Road, RFD 1, Syosset, N.Y. 11791; **Gordon H. Smith,** VI, 1 Elm St., Nassau, N.Y. 12123 from Duxbury, Mass.; Col. **Clifford A. Spohn,** XIV, 1114-2 Columbus Dr., Andrews Air Force Base, Washington, D.C. 20331 from Omaha, Neb.; **Walter Hanstein,** 19250 Canterbury Rd., Detroit, Mich. 48221; **William G. Abbott,** 3d, XV, 17440 East Jefferson St., Grosse Pointe, Mich. 48230 from W. Hartford, Conn.; Dr. **Gilbert K. Krulee,** X, 2205 Lincoln St., Evanston, Ill. 60201; Major General **Keith McCutcheon,** XVI, 4557 Ukali St., Foster Village, Honolulu, Hawaii 96818 from San Francisco.

As you can see we had lots of material for this first issue of the publication year. Those of you who contribute in time to get a deduction on your 1966 income tax can still include a note for the class Secretary with your check. Of if you prefer, use the telephone. Call station-to-station after 8 p.m. or any time Sunday. Early Sunday mornings are excellent and the likelihood of finding me home is very high. If you're travelling through Washington or New York, call one of the undersigned. Happy Thanksgiving, everyone.—**Paul M. Robinson, Jr.,** Secretary, 7710 Jansen Drive, Springfield, Va. 22150 (703-451-8580); **John G. Barmby,** Assistant Secretary, I.I.T. Research Institute, 1200 17th St., N.W. Washington,

D.C. 20036 (202-292-1610); **Paul M. Heilman,** Assistant Secretary, Copper Development Association, Inc., 405 Lexington Ave., N.Y., N.Y. 10017 (212-867-6500)

'46

Bill Cahill and F. Curtis Canfield have made my first reporting job a very fast one and I hope you will enjoy the following as much as I did:

"Crossing the country was nothing compared to crossing the bay from Boston to Provincetown. It took approximately the same amount of time, portal to portal, of course. Lindberg was chicken by comparison. Only a solid if faint memory of Course XVI kept us from walking. Geography helped too. This was the only flight in history scheduled for 15 minutes that nearly lasted a lifetime. **George** and Gloria **Ley** of Pittsburgh sat giggling and laughing all the way, little aware of the potential danger. Perhaps the most harrowing part was riding in the rain on the tailgate of the decrepit Chevy taxi from the airport. The driver announced after we had finished kissing the ground upon our arrival at the Provincetown Airport that the new road was closed (Peace Corps, or Poverty program in progress) and would be closed for the summer too. Chalk up another one for the administration! When we arrived mud-spattered and disheveled in the new Robert Hall sport coat (to create an impression and score one for upmanship), **Jim Corbett** immediately took our pictures in several ludicrous poses, before I had a chance to primp and comb the curly. Comparing the results all around, it was unanimously agreed that we all looked better, if fatter, 20 years later.

"Eagerly I asked to see **Edgerly.** The coward sent his oldest boy or screwed on a new head for the occasion. Some people will do anything. Tee Pee, Cappy Stu and Jean bounded off for tennis. The more conservative element bounded for the bar. Approaching some silly looking characters wearing gob hats and wanting to prove that the old flame of recognition and memory was functioning, I rushed up to Shep Arkin and Cliff Woods, exclaiming delightedly how happy I was to see them; except they turned out to be **John Gautraud** and **Gene Parish.** How's that for openers? **C. S. Lyon** harumphed as Pat dragged him away to practice his speech and run back to the Coop for Maynard's? . . . Bart's . . . cocktail shaker. Makes little difference as no one uses a cocktail shaker any more anyway, would you believe? Anyhow? **Bob Fried** and his luscious girl friend of long standing, Linesay, sidled up. "Know anything about a gambling hall?" he queried. I certainly do, as we make a trip every year up to Las Vegas to visit my money. Bob said, "Fine, you're in charge!" Quickly I pressed **Bug Brylawski, Win Hayward, Flinger** and others into service. **Bill Schield** helped distribute the money, which probably accounts for his being the big winner.

"Friday night, cocktails and dinner. **Ted Henning**'s erudite introduction of F. Curtis Canfield and **Dave Haog**'s wonderful copy of Orders of the Day October 1944 vintage stirred memories. Not much else stirred as the cocktail party was beginning to dull the senses. I was particularly touched with F.C.C.'s remarks; but am still wondering how to separate out the wheat from the chaff so to speak. I wonder whether they ever did find out how many recruits there were. Humorous incidents at the gambling hall: **Mason Lappin** betting $20.00 right up to the very end, while $5000 and $10,000 and $100,000 bills abounded. Lappin had exactly seven dollars to the good when it was over. F.C.C.'s look of disgust when he crapped out three times running. Brylawski sneaking out for another tightner. Win Hayward and John Gautraud, **Ralph Krenkel** along with **Bob Striker** plunging in vain. I'm a real winner; we lost $2,473,651 on the last roll. Lappin won the $51.00.

"Naturally at 1:00 a.m. it was too early for bed. **Bill Rapoport** told Mary Ann he was tired and he couldn't see why she didn't want to retire, after all it was his reunion. **Herb Hansell** and **Hillman Dickinson** gloated on how they had short-circuited Hertz brakes, accelerator, and magneto on four cars so that they could get a two hundred dollar refund on a $14.00 rental. **Russ Dostal** rushed around with **Ned Tebbetts** and **Spencer** arranging a golf game for the morrow. (The part where he [Dostal] continually wet his lips and rubbed his hands together worried me, as it did **'Stick' Buckman,** who failed to show on account of it. Good hearing about **Jim Chabot**'s big new job in Argentina running the Ford plant. Wait till he finds out that they don't have a plant there and that he has a one-way ticket. Serves the Sloan (GM) Fellow right. In the dark of the night those intrepid Navy men and cargo (wives), Ione and **John Gunnarson, Bill** and Anne **Siebert,** and a pair of stowaways sneaked up on us for an assault by sea. Being good little Tech Navy men they had no trouble negotiating the 120-mile trip through the Cape Cod Channel. However, they couldn't get the outboard started for the last 50 yards so we didn't see them till Saturday morning.

"Saturday dawned at 5:47. I know, because my room faced East and there were no drapes. Since the night before I had proved how much more I had increased my capacity, there were a lot of woeful sounds being emitted, until I located the eyeballs right where they should be—on my cheeks—and put them back in. Scurrying down to breakfast I had the misfortune of joining my wife and the **Goldsteins.** While Rosanne and Mary Ann discussed their clever children, Jim ordered mackerel and I careened off to the bushes. Jim was going full bore about how latrines should be designed according to the Princeton theory when we were rescued by the Class meeting. The meeting was something of a disappointment, especially with IBM **Ken Davis**'s loose treasurer's report. Don't you suppose that he could have been a bit more accurate than "approximately $500." I got a kick too out of the second-guessing stock brokers. What was really the highlight of the meeting strategy was the announcement of the class gift program. 1946's answer to A. P. Sloan is **Roger P. Sonnabend.** Matching gifts starting with an initial 'huner thou'. According to the formula of past class generosity and by perseverance of the regional Vice-presidents should be able to develop another $1,000 to $1,500. Picking **Jim Craig** as gift chairman was rather sneaky. He wasn't there! The meeting adjourned amid screams of fraud, audit and a suggestion from **Bill Jackson** that cumulative voting be established and **Rube Samuels'** insistence that we audit the expense and entertainment account. **Morrie Chomitz** then arranged for beachbuggy rides for a study of flora and fauna. Gene Parish arranged with the local internist for a stomach pump and we all delighted in seeing mother tern and her speckled eggs. The tough part of that trip was hauling all that old drift wood around for the wreck scenes. All that was needed was to haul Hansell's Hertz over. A tour through town was edifying to say the least. North Beach, Greenwich Village and Old Town all wrapped up in one giant cotton candy, salt water taffy beatnik package.

"To prove to each other what great shape we were in, **Hugh Jackson** and **Bob Spoerl** started warming up for the softball game at 10:30. (Spoerl needed it because he cheats so much that he needed three hours to remember all of the tricks.) The game commenced on the beach. First base was off in the distance, up coronary hill. For three innings no one got the ball past the pitcher. Bill Rapoport scooped up a grounder. Jim Finney fumbled for flies while balancing the beer. Third base disappeared and someone really stole it. After three innings of bruised egos and few runs the game was called because, 1. lost third base, 2. Spoerl cheats, 3. **Jack Norton** hid the ball so well he couldn't find it, 4. a ringer, **Joe Cincotta** 10-'46 showed up in uniform and 5. we ran out of beer. Just in the nick of time appeared **John Green** and his new partner **Don Hurter.** Hurter seems to be such a nice guy too. Thought he was smarter than that. John promptly lost three kids and a wife, borrowed a colorful outfit with a choice of ties and had his picture drawn by redoubtable Hensche. About the class gift to ourselves. The girls looked fairly reasonable, but do we really look that bad? Edgerly had his portrait done three times on Saturday and once on Sunday. Now, if an artist can't make him and **Wandrisco** look human, what chance have the rest of us got? More cocktail parties; the sauerkraut balls were a smash. Unfortunately, so were the majority of us by dinner time.

"A refreshing look back, at and into the future by Professor Roy Lamson concluded the evening with desultory remarks from the 'big mouth.' Dancing masters **George Ley, Win Hayward** and **Ken Davis** took over the floor. **Tom Westcott** fell in love and was disappointed to find out that it was his wife again. **Cliff Woods** bribed the bartender to stay open until 11:30. **Corbett** set up his own after hours joint, and Don Hurter enjoyed

Marilyn Spoerl's doggy bag until four a.m. By that time Big John Green had the world, **Dorflinger,** the **Schields**, **Bagger Browns**, and **Bill Jacksons** thoroughly bored. Spoerl was too, but couldn't go home like the rest of us 'cause it was all taking place in his room.

"There's only one thing to add about the clam bake. They didn't serve enough food and next time I'm really going to bring my wife. If I can make a deal with the warden. Reunions are fun. It takes five years for every one to forget how much they can be alienated in 48 hours. The final insult arrived at the office. Dave Haog sent in the warranty on his free Towel-O-Matic and complained that it wasn't a postage free card but a marketing survey, also that it didn't work. Also note to 30th reunion chairman. Since Provincetown is five hours by air from Boston and seven hours to New Haven by car with Rapoport's cigar going full blast on queazy stomachs, why not select Saigon or Bermuda for the 30th. We'll all be coming by wheel chair anyway. Regards, Bill Cahill."

Remarks made by F. Curtis Canfield at the 20th Reunion of the Class of 1946: "Needless to say, I am very glad indeed to be here with you at your reunion. Twenty years is a long time, and I, for one, am happy to still be around. I am glad, too, to see you all looking so prosperous, and to see you for the first time in civilian clothes. Aside from one or two accidental meetings with some of you in strange places like Sanibel Island in Florida and on a New Haven train, mutual communications between us have been disconnected and haphazard, quite in contrast to our daily intercourse, if I may call it that, at the S.S. Graduate House. That was carried on, as you remember, through the rather formal medium of the Plan of the Day. Possibly to your regret, and sometimes to mine.

"Two encounters with former mutual friends may interest you. The first occurred quite unexpectedly in the Schubert Theatre in New Haven, where I was accosted by none other than Chief Gintoff and his charming wife. Naturally I was surprised and delighted to learn that the Gint had become a connoisseur of the drama—the result no doubt of his extracurricular education at M.I.T. He looked much the same and seemed prosperous. At any rate, his seats were in the front row of the orchestra. Then a year ago, Mrs. Canfield and myself paid a call on Captain Blair on his estate outside Charlottesville. The Captain was as lean and sharp as ever, keeping busy as chief of the Forest Fire wardens in his part of the country. Had he known of this reunion I am sure he would have sent his best wishes.

Bob Fried and **Ted Henning** let it be known to me that this evening was to be spent in pleasant reminiscences, with the intellectual fare to be reserved for tomorrow night. As a result I have abandoned my plan to discuss with you the Theatre of the Absurd and, say, Sartre's Existentialism, subjects I know are dear to your hearts, and to talk instead on a nostalgic topic to which I have given the title, "Our Three Years Before the Mast, or What Navy life was like with Captain Joyce and Chuck Cherundolo." It may be hard for you to believe, but when we took up residence together, or perhaps I should say when we began our historic cruise together there on the banks of the Charles, I was the same age that you are now. And Captain Joyce was only slightly longer in the tooth than I am now. With all those stripes going half way up his sleeve, the good Captain seemed as Olympian and frightening to me then as I am sure some of us must have appeared to you, (P. Y. Craig and Chief Mulrey, for example). But nowhere was the good Captain more awesome than when he played the part of Captain Bligh once a week at Captain's Mast. Some of you may recall, with a twinge of pain, that this ancient Naval ritual involved the trial of various delinquents who had violated our rules of iron discipline. The ultimate punishment was exile to boot-camp, a fate regarded as almost worse than capital punishment. Woven into that pattern was another ritual that I daresay few of you can ever forget, although you have wished to. I refer, of course to that delightful and suspense-filled ceremony known as Captain's Inspection on Saturday mornings. Few of you will believe me, even now, when I say that it was more in sorrow than in anger that we were occasionally compelled to put on report those benighted souls who failed to live up to our altogether humane and reasonable regulations. The rules were explicit and designed for the sole purpose of keeping our Ship tidy. I deny the truth of the allegation some of you have made, or thought, that the regulations were promulgated for the purpose of keeping a large percentage of the Unit incarcerated over the weekends. Spotlessness was the aim, not imprisonment. I'm sure that your wives now appreciate the lessons you learned, sometimes the hard way I will admit, in bed-making, laundering, sewing, ironing, polishing, dusting and general housekeeping.

For a reason not easily explained, the good Captain had an obsession about radios, tailor-made blues, musical instruments, pets, and unstencilled gear. He declared them all unlawful. I emphasize, you notice, that it was the Captain's obsession, not mine. We were merely his obedient and submissive underlings, the unthinking and unquestioning instruments of his imperial will. When he spoke, we jumped. Later we would discover that behind his crusty exterior beat a kindly and sympathetic heart. Speaking of inspections, some of you may remember the Day of the Great Discovery. An officer, who shall be nameless, after completing his inspection of the "decks," as we so jocularly called them, suddenly decided to see if there might be some contraband hidden up on the roof. The ensuing result was a bonanza, a gold-strike of major proportions. A veritable Klodike of unlawful treasures was discovered, suitcases with civilian clothes, boxes and cartons containing illegal material of every description, radios, tailor-made blues, musical instruments and Heaven knows what else. With so much civilian clothing up there it appeared as if half the regiment was preparing to go over the hill, and had everything packed and ready. When the restricted list was posted, many were the hearts that were heavy that night, and the next, and the next. In later years, it must be confessed that that nameless officer would regret that he had not given the miscreants an hour or so to get the stuff out of sight or off the base. It was our duty to inspect the Sick Bay, too. And Commander Sullivan, our genial Medical Officer who had served in the Pacific, resented it as much as you did. To him we were thirty-day wonders, and he didn't want us snooping around. Personally I disliked inspecting Sick Bay, there was always such a strong smell of ether in there and I was allergic to it. In consequence, the inspection of Sick Bay, as far as I was concerned, was always a hurried and perfunctory affair. Sometimes I used to wonder why so much ether was being used. Nobody was ever operated on in there as far as I knew. Much later, I discovered that the Corpsmen, on Sully's gleeful orders, would go around spraying the place heavily with ether.

Looking back over our three years together, some memorable things stand out. Few who went through the ordeal of our beginning, on July 1, 1943, will forget that long, unmoving line, the wild confusion that followed the mustering-in, the measurements, the shots, the drawing of uniforms, and then the gradual settling into our implacable routine. What you did not know, was that we had had about four weeks to prepare for your arrival, or I should say, your onslaught. You did not know when you came aboard, that you had been placed in the hands of officers who had been mere civilians a few weeks before, muddled men, whose nerves were already shattered by sleepless nights and long days spent trying to convert the Grad House, designed to accommodate 200 men, into a ship, if you will excuse the expression, holding 1000. Perhaps you did not know either that the V-12 Officers were mainly somewhat superannuated professors, with three weeks of so-called training at a place called the Gulch at Columbia. Actually we were impostors, and ignorant impostors at that, knowing less than nothing about the Navy. Some of us had not gotten out of the habit of saluting the chiefs. Our course of training included a smattering of gunnery, signals, Naval history, Naval etiquette, and Navy Regs. It did not include instruction in how to care for, house, feed, equip and organize a vast Ship's Company. It would have given Hitler a big lift had he known how inept we were. Carefully concealed from you under a facade of blister was the fact that it was a situation in which the blind were leading the dumb. About all I can remember about that unhappy time before you descended on us was a speech given by another officer the night before you arrived. It was designed to lift our flagging spirits, something on the order of Henry V rallying his forces on the eve of battle at Agincourt, although I doubt if this particular officer had ever read Shakespeare. The gist of his rambling peroration was that we were expenable.

Expendable! This came as a distinct shock to me, a simple, harmless, peace-loving civilian. In the ensuing months I learned what he really meant. He meant that Lieut. Dahl and Ensign Peek and myself were to do all his work for him even if it killed us in the process. It was my first experience with Naval terminology that said one thing while really meaning another. On that memorable opening day it was my task as Personnel Officer to register each trainee. The Captain had made it unmistakably clear that I was to come up with an exact count of how many we had on board by the end of the day. I spent hours perfecting what I thought was a fool-proof system of counting heads and getting names. It worked perfectly, too, that is until it came time for me to eat my lunch, and then it fell apart. It wasn't until the middle of August or so that we knew how many of you were with us. If those first weeks seemed like some sort of ghastly nightmare to you, they seemed just as bad to us, or even worse. Everything was improvised. The Captain didn't want his "blue-eyed rabbits," as he called you, skedaddling over to Scollay Square, hence the regulations about not crossing the bridge. Bupers has assigned us a Physical Training officer and a flock of athletes masquerading as Chief Bos'n Mates. Hence our man-killing exercises in the early morning, known euphemistically as "Gintoff's Hour of Charm."

What it seemed to me we finally had constructed for ourselves as a result of our improvisations and regulations, was a well-ordered combination, and a rather remarkable one at that, of hotel, training camp, and federal penitentiary. Later, when we heard about the relaxed and casual way the V-12ers were being commanded at Harvard and Tufts, instead of loosening our grip, we began to take pride in our Spartan rigors. And the strange thing, looking back, is that we did have high spirit and good morale, after we began to get used to each other and settled down to the business of fighting our slide-rule war. Even the confusion about our aims and purpose eventually came to an end. Before that first summer was over, Bupers supplied us with a newly-created Bible, "The V-12 Regulations," which gave us all the answers we had so desperately been searching for, and everything that was expected of us became clear.

I hope the gripes and the discomforts and the nagging routines have dimmed with time, and that the pleasanter memories remain. After all, we both got a free education from Uncle Sam, you in your way and I in mine. And I know we are grateful for that. So I give you the names of Maki, Mulrey, Reese, Joey, Archibald, Wettler, Johnson, Longway, Fawcett, Greco, Joyce, Elliott, Hastings, Olsen, two Sullivans, Peek, Dahl, Cherundolo, Craig, Blair and Buracher, fine fellows all, and the names of those which time has put beyond my feeble powers of recall. If at times we made life miserable for you, I know you will be magnanimous and forgive us. We were doing the job as we thought it should be done. To see if we were successful or not, you need only look around you here tonight. Good luck —and pleasant sailing!"

What more can be said?—**Donald A. Hurter,** Secretary, Thomas W. Reed Company, 533 Commonwealth Ave., Boston, Mass.

'47

After a long, dry summer I have a fair accumulation of news in the mailbag. To start with we had an interesting Alumni Day program attended by the following: Claude Brenner, Robert Danner, Mr. and Mrs. Reynold A. Grammer, Jr., Mr. and Mrs. Herbert Kay, Walter P. Kern, Morton Loewenthal, Richard S. Mooney, William R. Page, Mr. and Mrs. James Phillips Mr. and Mrs. Martin Phillips, Mrs. Adelaide Sundin, and John L. Wyman, Jr. . . . **Harold F. Juckett** has moved to Grand Rapids where he is now associated with the garden tool division of Bissell Inc. He is now residing with his family consisting of a wife and two children at 3623 Lake Drive S.E. . . . Dr. **Peter P. Poulos** of Maplewood, N.J., is Associate Professor of Surgery at the New Jersey College of Medicine. . . . Commander **Robert H. Blount,** USN, is commanding officer of the nuclear-powered, polaris missile submarine, USS Patrick Henry. . . . **Thomas L. Bell, Jr.,** is now Vice-president of the Business Equipment Group of Bell & Howell Company. Tom says that he is not related, unfortunately. . . . Capt. **John F. Refo** is assigned to the Secretary of Defense, Weapons Systems Evaluation Group in Arlington, Va. . . . **Harvey S. Miller** has the distinction of being president of three companies: New England Hard Facing Company, Nehfco Alloys & Equipment Inc., and the Kenhard Corporation. . . . Captain **James A. Dare** has assumed command of the Naval Ordnance Laboratory in White Oak, Md. . . . **Ezra S. Krendel** has been appointed Professor of Operations Research and Statistics at the University of Pennsylvania. . . . **Norman N. Holland** has written Psychoanalysis and Shakespeare, a new book published by McGraw Hill Book Company. The book was reviewed recently in in the New York Times Book Review. . . . **Arnold S. Judson** has returned from four years in London with his family. He worked as a consultant to British industrial organizations on problems connected with improved productivity. He has joined Arthur D. Little to work in their R&D division in the field of organizational behavior and change. Arnold's first book, A Manager's Guide to Making Changes, has just been published by John Wiley & Son. . . . We hope to announce plans for the 20th reunion in the December column, since the committee is in the process of finalizing the location and program. Don't miss the next issue.—**Martin M. Phillips,** Secretary, 41 Avalon Rd., Waban, Mass. 02168.

'48

It is with regret that we make note here of the passing within the last year of three of our classmates—**W. Scott Knowles,** July 3, 1965, Lt. Col. **Thomas F. McGraw,** November 22, 1965, and **Frank Viera, Jr.,** April 6, 1966. Our deepest sympathies to their families. Our sympathies, too, to **John H. Wright** whose wife Carol passed away last October.

As usual, the clipping collection for the November issue is quite substantial. Alumni Day, 1966, was attended by the following 48'ers: Charles W. Adams, Mr. and Mrs. Paul Anderson, Jr., Bob Bliss, Ben Brettler, Mr. and Mrs. Ken Brock, Mr. and Mrs. Lester Corrsin, Mr. and Mrs. Peter J. Davis, Mr. and Mrs. Dick Harris, Mr. and Mrs. David Hoadley, Dr. Albert J. Kelley, William R. McEwen, Denman K. McNear, George Macomber, Arthur F. Muldoon, Mr. and Mrs. Harry G. Parke, Lincoln D. Richardson, Mr. and Mrs. Norm Seltzer, A. Graham Sterling, John W. Walsh, and Mr. and Mrs. Theodore R. Yoos. . . . **John Wright** informs us: "Son Allen graduated from Wahkiokum High, and Mark from Wahkiokum Grade School May 31 and June 2, respectively. Presently Publication Supervisor for Systems Division, Beekman Instruments, Inc." John's address is 1021 Flamingo Way, La Habra, Calif. . . . From **David L. Walton** we learn: "I am presently in Viet Nam as No. 2 man in the whole USO set-up here. At present my job is to get new USO's open. In five months I have opened seven sure ones. My address is 3rd Marine Rec. Center, USO, FPO 96602, San Francisco." . . . **George F. Collins** writes: "Present position—Director, Environmental Services, TRC Service Corporation (Applied Science Affiliate of the Travelers Research Center, Inc., Hartford, Conn.) in charge of environmental hazards surveys for several nuclear power plants, community air pollution surveys, and related research studies." George's address is The Travelers Research Center, 250 Constitution Plaza, Hartford, Conn. . . . **Lewis A. Blodgett, Jr.,** 606 Fairview Road, Asheville, N.C. 28803, writes: "Am a meteorologist for the Synoptic Climatology Section of the National Weather Records Center at Asheville (ESSA), where I have been since 1955. Have four children; Lewis III, 8; Addison, 7; Lancaster, 5; and Daphne, 4." . . . And this from **Gordon O. F. Johnson** of 3512 Saylor Pl., Alexandria, Va.: "Four children—Vice-president of Logetronics, Inc., manufacturing photographic printers and processors—currently President, Washington Chapter, Society of Photographic Scientists and Engineers." Gordon has been with Logetronics since its formation in 1955 and most recently Vice-president and Director of Sales. He will continue to supervise all marketing activities for the firm's graphic arts film processors and technical photographic and optical instruments and equipment. He is active in numerous professional societies. . . . Dr. **A. V. Feigenbaum,** Manager of Manufacturing Operations and Quality Control, General Electric Company, N.Y.C., recently won the coveted Edwards Medal "for outstanding leadership in the American Society for Quality Control, and in the practical use of modern methods of quality control." Dr. Feigenbaum served two terms as President of ASQC and one

as Chairman of the Board. He is one of the two U.S. directors on the Board of the International Association for Quality. He has served in consulting capacities with various organizations, including the Department of Defense at its Industrial College of the Armed Forces. In Washington, D.C., he headed the 90-man National Security Industrial Association's task force study of the Army Materiel Command. He is a member of the Board of Directors of the Engineers Joint Council and of the Council for International Progress in Management. He serves on the Advisory Council of the United States Army. He is the author of several articles in the fields of administration, management training, industrial economics, and management programming and is the author of the McGraw-Hill book, Total Quality Control—Engineering and Management, as well as the soon-to-be-published books, Management Programming (John Wiley), and The Organization Process (McGraw-Hill). . . . **Leo Martin** has been appointed manager of General Box Company's Chem Foam Division in Addison, Ill. He will continue to serve as plant manager of the company's polystyrene plastics division in St. Charles. Leo joined General Box in 1962 as Sales Manager, New Products, and was promoted to St. Charles Plant Manager two years later. He is a member of the American Chemical Society, Society of Plastics Engineers and Midwest Foam Molders Group. He and his wife and their two children live at W9 Trillium Court, Batavia, Illinois. . . . **Richard C. Berry** has been elected Vice-president, Research and Development, of Rogers Corporation, Rogers, Conn. He has been technical director since 1964. . . . Prof. **Eric Mollo-Christensen** attended a workshop on air-sea interaction sponsored last February by the Office of Naval Research. . . . **Stanley Abkowitz,** Manager of New Developments at Nuclear Metals Division of Textron, Inc., West Concord, Mass., reported on two processes for producing titanium alleys and composites in an article in the April issue of Metal Progress. An expert in the field of high temperature aerospace metals, he is responsible for the development of R&D programs at Nuclear Metals and is senior consultant for development programs covering superalloys, reactive and refractory metals. In addition to membership in ASM, he is on the register of AIME and serves as chairman of its Titanium Committee. He is also co-author of a book, Titanium in Industry. He and his wife and three children live in Lexington where he is on the board of directors of Temple Emunah and chairman of its Youth Commission. . . . **M. W. P. Strandberg** was co-author of an article in the April IEEE Journal concerning thermal microwave phonons. . . . **Melvin B. Zisfein** has been appointed Associate Director of the Franklin Institute Research Laboratories, Philadelphia. The new post involves the planning, acquisition, and coordination of the new research programs in the various technologies of interest to the Laboratories. In 1960 Mr. Zisfein joined Giannini Controls Corporation to found and build the Astromechanics Research Division, now in Malvern, Pa. He served as General Manager of that division until 1966 when he left to assume his present position. He and his family reside in Rosemont, Pa. . . . Our congratulations to **Ken Brock** who has succeeded Henry B. Kane, '24, as Director of the M.I.T. Alumni Fund. Ken has been Associate Director of the Fund for the last three years. For other details we refer you to page 73 of the July, '66 Review. And, by the way Ken, didn't I see your name on the "Important Message" board out at Sequoia National Park this past summer? . . . **Charles A. Licht** has been appointed to the newly created post of Vice-president, Engineering, of the U.S. Reduction Company of Ontario, Calif. The creation of the position was brought about in an effort to improve the control of the company's enlarged capital expansion program and to effect the coordination of plans for improvement and upgrading of existing plants and facilities. Chuck has been with the U. S. Reduction Company since 1954 and has served as Chief Engineer, Manager of Engineering and Development, and Manager of Operations for the recently built Ontario plant. He is a Registered Professional Engineer in several states and a member of numerous professional societies. He will be moving from Claremont, Calif., to the Chicago metropolitan area to assume his new responsibilities on September 1. . . . **Harold O. Hilmar,** RD 3, Box 861M, Gales Ferry, Conn., was recently promoted to Chief Naval Architect, Electric Beat Division, General Dynamics. . . . Captain **Richard L. Corkran, Jr.,** USN, Commanding Officer, U.S. Naval Underwater Sound Laboratory, New London, discussed sonar and sensor developments in an interview published in May in DATA, the Magazine of Military Research & Development. He and his wife and two children live in New London. USL is the Navy's primary laboratory for underwater acoustic research and sonar system design. . . . **P. Gene Smith** authored an article in the May issue of the IEEE Transactions on Aerospace & Electronic Systems. He joined the Research Triangle Institute, Durham, N.C., in 1963 and is now their Director of the Radiation Systems Laboratory. He also holds an appointment as Adjunct Professor of Electrical Engineering at the University of North Carolina, Raleigh, where he teaches communications courses. . . . Halcon International, Inc., devoted to new business exploration, research and development, in the organic and petrochemical field, has appointed Dr. **Charles N. Winnick** Director of Chemical Research. Dr. Winnick joined Halcon in 1957. He lives with his wife and three children at 491 Palmer Avenue, Teaneck, N.J. . . . **William J. Riordan** of 165 Laurel Hill Road, Mountain Lakes, N.J., has been promoted to Head of the Underwater Systems Department at Bell Telephone Laboratories, Mountain Lakes. His new responsibilities include analysis and planning of underwater systems for the U.S. Navy. Since joining Bell Laboratories in 1956, Bill has engaged in evaluation, system design, and operations research studies in the Underwater Systems Laboratory. Most recently he has been supervisor of the planning studies group. He earned the M.A. and P.D. in mathematics at the University of Chicago in 1951 and 1955, respectively. . . . **Ben Brettler** has been appointed to membership on E. G. & G.'s board of directors. Ben is Vice-president and Manager of the company's Systems Division, and President of the wholly-owned subsidiary, E. G. & G. International, Inc. "Dr. Brettler's appointment as a director is enthusiastically endorsed by the board," said Chairman of the Board, Kenneth J. Germeshausen. "His technical and management experience and his understanding of the company's far-reaching and diversified operations make him a very knowledgeable and valuable member." . . . **Ben Danziger** was elected to the newly created post of Vice-president, Finance, by the Board of Directors of Tootsie Roll Industries, Inc., Hoboken, N.J. Ben joined the company in 1965 as Controller. In addition to his financial duties, he is presently involved with the supervision of the installation of the organization's new manufacturing facility in the Chicago area. . . . At the Mid-Year Meeting of the Society of Automotive Engineers in Detroit, **E. Eugene Larrabee** described a new strain gauge balance that is designed to measure aerodynamic forces on small automobile models when subjected to turbulence in a wind tunnel. . . . Prof. **Robert G. Loewy** of the University of Rochester, currently on leave as chief scientist of the U.S. Air Force, became Director of the University's Space Science Center September 1. Professor Loewy is an associate fellow of the American Institute of Astronautics and Aeronautics and served on the Structural Dynamics Research Advisory Committee to NASA from 1958 to 1960. He was technical director and journal editor of the Amerian Helicopter Society from 1963 to 1965; this year he was appointed an honorary fellow of the Society. In 1958, he received the Lawrence Sperry Award of the American Institute of Astronautics and Aeronautics. . . . **Ronald F. Brodrick** received the Richard L. Templin Award of the American Society for Testing and Materials last June. The award was given for an outstanding paper (co-authored with Donald J. Fritch, '50, who also received the award) describing new and useful procedures and mechanical apparatus, "Fatigue, Tension, and Stress-Rupture Tests of Tungsten at 6000° F with an Electron-Beam Furnace", published in Volume 64, ASTM Proceedings. Ron joined the Aircraft Gas Turbine Division of General Electric Company in 1948 and remained there until 1951 when he joined Lessells & Associates as a senior project engineer. For six years, starting in 1953, he was an instructor in Advanced Dynamics and Strength of Materials at Northeastern University Graduate Evening Division. He has written numerous technical reports for government and industrial clients and has been a member of ASTM since 1956, serving as secretary of Committee E-9 on Fatigue from 1960 through 1964, and he has been active in the New England District Council. He also participates in the work of two committees of the Society of

Automotive Engineers and is a member of the Society for Experimental Stress Analysis. . . . The name of **Herbert V. Shuster** appeared in the May Glass Packer/Processor in connection with some automated nut packaging machinery, much of the planning for the automated equipment having been done by him. . . . **C. Blake** of M.I.T.'s Lincoln Lab was chairman of a session on Amplifiers, Multipliers, and Converters at a session last spring of the IEEE. . . . The May 9, 1966, issue of Electronic News contained an article about our Dr. **Albert J. Kelley, Jr.,** Deputy Director of NASA's Electronics Research Center, who was program chairman for the National Telemetering Conference held in Boston and sponsored jointly by the American Institute of Aeronautics & Electronics Engineers and the Instrument Society of America. We quote the first two paragraphs of this interesting article: "Two inches. This is the margin which prevented Albert J. Kelley, Jr., from competing for the glamorous role of American astronaut. Even by bending his knees, Dr. Kelley could not bring his 6-foot frame down to the required 5-feet, 10-inch maximum. It is probably the only time in his 41 years that the former Navy flyer and test pilot failed to make the grade. As a member of that large group of 'almost astronauts', Al Kelley has no regrets. 'Those are pretty stiff requirements; I'm not sure I could have met them.' Yet some of his contemporaries believe his qualifications—ranging from a Ph.D. in electrical engineering from M.I.T. to a personal charm and rugged profile in the best Jack Armstrong tradition—are the equal of NASA's best spacemen." The Class of '48 may not have the distinction of having a representative among the very first Americans to land on the moon, but whoever does make it can know that some of our members helped get them there.—**Robert R. Mott,** Secretary, Kent School, Kent, Conn.; **John T. Reid,** Assistant Secretary, 22 W. Bryant Ave., Springfield, N.J.; **Richard V. Baum,** Assistant Secretary, 1718 E. Ranche Dr., Phoenix, Ariz.

'49

As of this writing, nationwide headlines announce that Dr. **William J. Haddon, Jr.,** has been nominated by the President to head the national traffic safety agency established by Congress. Government and industry leaders generally have been high in their praise of Bill's remarkable combination of qualities and training for this new and difficult assignment. About 250 persons attended the ceremony in which President Johnson signed the auto safety legislation into law. Among them were Ralph Nader, author of "Unsafe at Any Speed," and the presidents of General Motors, Chrysler Motors, and the Automobile Manufacturers Association. . . . **Dwight Hibbard** has been promoted from chief engineer to general plant manager of the Cincinnati and Suburban Bell Telephone Company. Dwight lives with his wife Terry and two daughters, Candace and Leslie, in Madeira, Ohio, near Cincinnati. . . . Back in August, those of you who attended the 15th Reunion received, or should have, the formal portraits which **Bert Chope** took of us. Nell and I are delighted with the one we received. Speaking of Bert, he was the commencement speaker back in June at the 121st graduation exercise of Muskingum College in New Concord, Ohio.

I am saddened to report the death of **Jack D. Eggerman** on June 27, 1966. Jack had worked for 15 years in reliability engineering at Hughes Aircraft, the company which built the Surveyor spacecraft which soft-landed on the moon in mid-June. We very much hope that Jack knew of this fantastic engineering achievement which a colleague described as "a real monument to Jack's ability." . . . **Bob Stevens** has been appointed plant manager of Roycemore, Inc., a drug specialties manufacturer in Elmhurst, Ill. Bob lives in Wheaton, Ill., with his wife and three children. . . . Dr. **Jack B. Chaddock** has been appointed Chairman of the Department of Mechanical Engineering at Duke; he was formerly professor in the same subject at Purdue. . . . Dr. **Elbert C. Herrick** writes that he is a section head at the Great Lakes Research Corporation in Elizabethton, Tenn. He lives with two stepsons, 13 and 17, and a son, aged 3, in Bristol, Va. . . . A brief note from **Bob Weeks** states that he is the commanding officer of the USS Hull (DD945). He lives in Chula Vista, Calif. . . . Captain **James Wish** is planning officer for the Charleston (So. Carolina) Naval Shipyard. He and his wife Arlene and four children live in Quarters Z there. . . . **Lindsay Perry** writes from Boxford, Mass., that he is operating three companies on the North Shore: one in land development, one in the sales and building field, and one which finances construction loans. Recently he has been developing a 250-acre tract on Nantucket Island as an all-season vacation community with homes at $30,000 and up. . . . Our old Reunion Committee associate, **Paul Johnson,** a major in the army reserve, was among 274 Army officers who received diplomas at the Army Command and General Staff College at Fort Leavenworth, Kansas, back in June. The lengthy period of study preceding the award was intended to prepare the officers for duty as commanders and general staff officers. Paul and his large family live in Bedford, Mass.

Marvin Byer has been appointed director of research, development, and quality control for Oregon Freeze Dry, Inc. of Albany, Ore. For 11 years prior to his present assignment, Marvin held a similar position with the Pillsbury Company in Springfield, Ill. . . . **Ed Bolton** has joined the Sprague Electric Company as product specialist on ceramic capacitors. Sprague is in North Adams, Mass. Previously Ed was product engineer manager for ceramic capacitors with Cornell-Dubilier in Norwood, Mass. . . . **Peter K. Stein** is a professor of Engineering at Arizona State University in Tempe. Next January 23 to 27 he will be director of the Sixth Annual Course in Measurement Engineering at the University. He will also lecture on Basic Measurement Engineering Theory. . . . Commander **Linsey Ashley** writes that having served as fleet electroncis material officer on the staff of the Commander-in-Chief, U.S. Atlantic Fleet, he is now re-assigned to be technical adviser to the Director of Naval Communications in the Office of the Chief of Naval Operations in Washington. . . . **John Moore** reports a son born May 11. He also describes doctoral work at Columbia in which he is building an infrared absorption cell with 80-meter path length and 3000 psi pressure to study model Venus and Jupiter atmospheres. . . . **Noel Davis** says he is building a phytotron in North Carolina and that his business and family are both in excellent condition. He lives in Chagrin Falls, Ohio. . . . **Paul Reynolds** has been promoted to Vice-president, Engineering, with Associated Construction and Engineering Company in South San Francisco, Calif. The company designs, engineers, and provides construction management services on commercial industrial construction. Captain **Francis Tofalo** reported for duty last June as Chief, U.S. Navy Section, MAAG according to a brief note. (I regret that I don't any more

At Arizona State University, Measurement Engineering Short Course lecturers celebrate their fifth anniversary. Far left is Professor Peter Stein, Program Director, and far right is Kurt S. Lion, associate professor of applied biophysics, M.I.T. In between are three other "regulars" in the short course: Robert Moffat, Stanford University; Richard N. Motsinger, Motorola, Inc.; and L. Spencer Wirt, AiResearch Manufacturing Company.

know what MAAG means than I know what a phytotron does.) . . . Commander **William Wicks** has informed me, through Alumni channels, that he is serving as Chief Staff Officer at the U.S. Navy Underwater Sound Laboratory in New London, Conn., where research and development are conducted in undersea warfare. . . . General Aniline and Film Corporation has announced the appointment of **Ken Prytherch** as general product line manager in the dyestuffs and pigments marketing department. Ken, with wife Sofia and children Andrew, 12, and Susan, 11, lives in Wayne, N.J.

Clyde Adams is professor of Metallurgical Engineering at M.I.T. and is an authority on welding technology. In April he spoke on "Heat Flow in Welding" at a conference in Cleveland, Ohio, and in June his article, "Laser Welding—an Unusual Process," appeared in the Machine and Tool Blue Book. . . . A quite unusual story of academic accomplishment is reported in the Wayland (Mass.) Town Crier dated May 19, 1966. The paper reports that although **Greg Lynes** did not get his degree in 1949 with the rest of us, he returned to M.I.T. in June 1965 as an Alfred P. Sloan Fellow for an intensive year, at the end of which he received both bachelors and masters degrees in Industrial Management in ceremonies on June 10, 1966. While Greg was earning his degrees, his wife participated with him in the program; his son Philip was co-editor of the college paper at Earlham College in Richmond, Ind., and his daughter Linda, with her husband Norman Groetzinger, was attending Yale University. Linda was one of the first women ever to attend Yale. Greg is a division logistics manager with Sylvania Electronic Systems.—**Fletcher Eaton,** Secretary, 42 Perry Drive, Needham, Mass. 02192

'51

Welcome back. To those of you who were unable to make it, you might as well know that the 15th reunion was a fabulous success. To those of you who did make it—how about that clambake! Close to 270 people attended, setting a record for 15th-year reunions. With the new year we also have some new class officers. **Marvin Grossman,** our new President, is President of Grossman Sales, lives in Newton, Mass., and he and Joanne have three children (we reported some of this last year). . . . **Fred Aldrich,** our reunion chairman, is our new treasurer. I'll update his resume of a year ago also. He and Jan have three children, live in Lexington, Mass., and Fred was recently promoted to Operations Manager of New England Instrument Company. . . . **Chuck Hieken** was written up a few months ago but a quick review for any of you who may have missed it. He and Donna live in Sharon, Mass., have two children, and Chuck is a partner in the patent law firm of Wolf, Greenfield, and Hieken. . . . **Fred Bumpus** is Assistant Class Agent and Vice-president of Boston Manufacturers' Mutual Insurance Company (as reported last May). Not reported was that he and Mona rounded out their family at reunion time with another addition. The score now: two boys and two of the other kind. . . . Assisting in the secretary department, and you will hear from them throughout the year, that is, if you will write in so that we will have something to report, are **Mickey Alper, Walt Davis** and **Paul Smith.** Mickey is manager of the Applied Mechanics Section at Jet Propulsion Lab, California Institute of Technology, where he has been since leaving Tech. His duties relate to support of the Mariner flights to Mars and Venus and Surveyor to the Moon. He lives in Pasadena, and he and Marcia have three children: Ian, six, Robin, three and one-half, and Julia, one. . . . **Paul Smith** is a Section Head at ITT Federal Labs. He and Gretchen live in N. Caldwell, N.J., with Ken, eleven, Audrey, ten, Chris, eight, and Dave, four. . . . **Walt** and Madeline **Davis** live in Brockton, Mass., and have three children: Janine, 14, Laurene, 12, and Walter "Chip" (and he really is a chip off the old man), 11. Walt is with B. A. Simeone, Inc., manufacturing, selling and installing crushed stone and bituminous concrete payments. Walt spends his spare time flying, sailing, on the golf course and on reunion committees! . . .

One of the nice features of this issue is that we have had the entire summer to collect news. First in the clippings: **Mert Flemings** and **James Burkhardt** participated in the M.I.T. Summer Study on Occupational, Vocational and Technical Education. As you know, Mert is a Professor at M.I.T. Jim is with the M.I.T. Science Teaching program. . . . **George K. Benson** was named Production Engineer for the newly formed Polymer Resins Department of American Mineral Spirits Company, a Division of Union Oil of California. George had been with Goodyear Tire and Rubber Company, Chemical Division, Southeast Polymers, Inc., and Wica Chemicals at various times prior to his move to Murray Hill, N.J. . . . **Ken Kopple** spoke before the Akron section of the American Chemical Society. Dr. Kopple is an Associate Professor of Chemistry at the Illinois Institute of Technology. Prior to this he had been with the University of Chicago, G.E. Research Laboratory, and the U. of California at Berkley (as a Fellow). . . . **David Hammel** is a digital systems analyst at Raytheon in Bedford, Mass. In addition to his degree from Tech David has a Masters from the U. of Penn. . . . **Paul Fopiano** joined NASA at their Cambridge (Mass.) Electronics Center. Paul had been with P. R. Mallory Research Labs. Prior to getting his Sc.D. from M.I.T. in Metallurgy, Paul spent a year at the Swedish Institute of Metals Research in Stockholm. (Incidentally, **Bill Flanagan** also was with Paul in Stockholm; Bill went on to teach at the U. Of Washington after getting his Sc.D. at Tech.) The Fopianos have three children and live in Winchester, Mass. . . . Under a cover story entitled "The Pump That Can Keep You Alive", Dr. **Gerald Austen** was featured in the Rotogravure section of one of the Boston Sunday papers for his work at the Mass. General Hospital. Gerald has been in these pages before, but I thought that this, as another honor to our classmate, should be reported. The lead line read, "The story of a would-be engineer turned physician who devised a heart lung machine." . . . **Tom Hagan** spoke at the 1966 Spring Joint Computer Conference in Boston. Tom is Vice-president of Adage, Inc., Brighton, Mass. He and Carolyn live in Newton Centre, Mass., with Tod, nine, Sarah, six, and Melissa, three. . . . **Michael Kesler** was promoted to head of research and engineering applications at Esso Research's applied math division. The Keslers live in Paramus, N.J., and have three boys and a girl. . . . Dr. **Anthony Kurtz** was elected President of Kulite Seiconductor Products, Inc., Ridgefield, N.J. Prior to joining Kulite six years ago, Tony had been Director of semiconductor applied research at Minneapolis Honeywell. . . . **Henry Marsh** is now the Supervisor of product development in the transportation equipment and appliance materials marketing division of Owens Corning Fiberglas Corporation, Toledo, Ohio. . . . **Lou Stern** is leaving Los Angeles to return to New York City. I hope I'll be able to add to that later. . . . **Edwin Richard,** Frontenac, Mo., is Manager of Evaluation, Central Research Department, Monsanto. . . . **Robert Sittler** received the M. Barry Carlton award from the IEEE. . . . **Harold Teubner** has been promoted to Brigadier General in the U.S. Air Force. After seeing action which resulted in his receipt of the Legion of Merit, three Distinguished Flying crosses, three Air Medals and the Air Force Commendation Medal, Harold is being stationed in the Pentagon.

At Tech, **Winston Markey** has been promoted to Professor and **Alve Erickson** to Associate Professor. Their fields: Aeronautics and Mechanical Engineering, respectively. . . . Alumni Day drew a large number of classmates to the campus, many of whom had also been at the reunion: Fred Aldrich; Mr. and Mrs. Joseph Amblard, Mt. Royal, Canada; David Bossen, Columbus, Ohio; Gerry and Betty Burns, Cincinnati; Marvin and Marcia Burns, now of Wilmette, Ill.; the Arturo Chavez-Jofres, Dobbs Ferry, N.Y.; Jules and Janet Davis, Scarsdale, N.Y.; John and Joan Dowds, Oklahoma City, (I'll have a more extensive report on them later); the Glen Eichenseers, Arlington, Mass.; the Bill Finckes, Huntington, N.Y.; Chuck Hieken; Mr. and Mrs. Lawrence Hitchins, Pittsburgh; Harold Jandebeur, Yorktown, Va.; Fred and Betty Ann Lehmann; Howard Levingston; the John McEvoys, Wilmington, Del.; Stan Marcewicz, Trenton, N.J.; Charles Orne, Needham, Mass.; Sam Rubinovitz, Lexington, Mass.; Larry and Carolyn Schneck, Syosset, N.Y.; Dr. and Mrs. Clint Seeley, Andover, Mass.; James Shepherd and his wife, Nance, N.Y.; Hank and Ann Spaulding; Lou and Mary Sylvia, Wilmington, Del.; and Harry Wolf, Wilton, Conn. I do have additional news on many of these people, but I will save it for another time.

By the way, **Bob MacCallum's** address change noted last season was cleared up

with a news release from Union Carbide: Bob was appointed Regional Manager of the Pittsburgh Sales Office for their Mining and Metals Division. Bob has been with UC since 1956. . . . I really hate to start off the year like this, but—I'm going to close with another list of those whose addresses have changed but who have ignored our request for news. In all fairness I must say that some whose names appear have responded, but due to our editorial time lag, our notes and theirs cross in the mail. To those classmates, I apologize, but to the rest of you! Gilbert Levey, Course 16, whose new address is Lexington, Mass.; William F. Moon, II, Pearisburg, Va.; William Surette, Jr., VI, Westport, Conn.; Richard Vyce, II, also Lexington; Francis Yodis, X, Ledgewood, N.J.; Allen Elston, XV, Highland Park, Ill.; Lionel Flotte, Jr., I, New Orleans; Bob Nickerson, II, Wethersfield, Conn.; Alex Primas, II, Norristown, Pa.; Augustas Rigas, Youngstown, Ohio; John Ryan, VI, Hyde Park, Mass.; Ronald Silver, XIII-C, Pleasantown, Calif.; Reverend Wray McKay, VIII, Bronx, N.Y.; and Bob York, Council Bluffs, Iowa—**Howard L. Levingston,** Secretary, 358 Emerson Road, Lexington, Mass. 02173; Assistant Secretaries: **Marshall Alper,** 1130 Coronet Avenue, Pasadena, Calif.; **Walter O. Davis,** 346 Forest Avenue, Brockton, Mass.; **Paul G. Smith,** 11 Old Farm Road, N. Caldwell, N.J.

'52

First issue of notes for the new year, and to begin I wish to thank **Jim Davidson, Gus Rath,** and **Doug Haven** for contributing columns during the spring, when I was off to prove to myself the world was round (really truly it is). It was a tremendous experience travelling through the South Seas, New Zealand, Australia, South and East Africa for revisits, the Greek Islands, the Bavarian and Swiss Alps, and home through Britain.

Have just returned from the 1966 Alumni Officers Conference and it is pleasing to note that 1952 is one of the leading classes in terms of active participation by classmates in the Alumni Fund Organization, with certificates of appreciation going to **Jim Stolley** in Erie, Pa., **John Coughlan** for Special Gifts, Boston, **Bradford Schofield,** Belmont, Mass., **John Prizer,** Birmingham, Ala., **Sheldon Thorpe,** Chicago, **Arnold A. Kramer,** Worcester, and to Class Agent, **Stan Sydney,** in Brookline, Mass.

Richard C. Wingerson, '52

Among those present for the Conference were **George Jordan,** up from Fairfield, Conn., where he is with Cummins Jordon and Associates who do management consulting with emphasis on executive recruiting and on planning, **George Bradley** up from Bridgeport Brass, **Arnold A. Kramer** in from Worcester, **Doug Haven,** and **Nick Melissas.**

Have on my desk an interesting interview from the Houston Post where **Joe Moore,** partner of Bonner & Moore Associates, consulting, fielded some questions on the role of computers in today's life, with accent on the eventual consumer uses. . . . From Ryan Electronics in San Diego, Calif., comes the announcement of **Robert R. Schwanhausser** being named Vice-president. Bob has headed Ryan's target drone programs for the past six years. . . . Diebold Inc. appointed **John S. Rydz** as Vice-president in charge of Research and Development. Diebold is a producer of bank vault equipment, office equipment, and business systems and is located in the Cleveland area. John is a member of IEEE, American Physical Society, Technical Association of the Graphic Arts, and the Cleveland Engineering Society. . . . **John T. Fitch,** nationally known for the TV program M.I.T. Science Reporter, has been appointed Physical Sciences Editor for Ealing Film-Loops, where he will be responsible for producing high school and college level films on physics, chemistry, and the earth sciences. Ealing is the world's largest producer and distributor of Film-Loops which are designed for students to view themselves with portable projectors. John plans to continue as Science Reporter and will start a new series of 13 programs by WGBH (Boston Ed. TV Station) under contract to NASA which will take him to NASA bases and contractor facilities, these to be for distribution in 1967. . . . From Wilmington, Del., **Cliff Sayre** has been promoted to Senior Supervisor in the intermediates research section of DuPont's Plastics Department where he will be working on polymer processes. He and Mary announced a daughter born in June 1965, red haired Elizabeth. . . . U.S. Air Force Major **Richard C. Wingerson** was graduated in June from the Armed Forces Staff College in Norfolk, Va., where the course included a study of organization, planning, and operations, in addition to related aspects of national and international security. The course is designed to prepare its graduates for duty in all echelons of joint and combined commands. . . . **Lawrence Strickland** is announced as Manager of Geosciences Operations in the Science Services Division of Texas Instruments, Inc. . . . **Arthur Turner** who is living in Carlisle, Mass., has been appointed Chief Engineer, Emission Engineering, for Baird Atomic, Inc. This section will be in Bedford, Mass. . . . And from New York comes a letter from **David Ulrich,** who is with Esso Standard working with the Australian subsidiary, that he plans to marry Barbara Bennet from Hartford, Conn., in October. Congratulations. . . . **Bob Danforth** won the New England Championship in the 210's for the third year at Marblehead during Race Week.

Robert R. Schwanhausser, '52

Bob is Vice-president of Marketing at Lite Control in Watertown.

The 8th annual cocktail party in June was a success with among the many present, Charlie Bethel, Bob Briber, Herb Brody, Jim Davidson, Herb Eisenberg, John Fitch, Art Freeman Doug Haven, George Jordan, Arnie A. Kramer, Dick Lacey, Ed Margulies, Nick Melissas, Dick Quigley, Stan Solomon, and Dan Sylvia. And finally that brings us to mention that the 15th Reunion is set for June 9-11 at the Wychmere Harbor Club in Harwichport, Mass., down on the cape. Have you marked your calendar? Also, plan to include Alumni Day, June 12th at M.I.T. if possible. Until next month—**Dana M. Ferguson,** Secretary, Box 233, 242 Great Rd., Acton, Mass.

'53

Another summer has come and gone and I hope that it has been pleasant for all of us '53ers. There is a fair amount of news to catch up with, so here goes. Perhaps one of our most interesting classmates is **Nari Malani,** X, who right off the bat has the distinction of being one of our few remaining bachelors. After receiving both a B.S. and M.S. from Tech, Nari spent a period on the faculty of both M.I.T. and Harvard. This was followed by employment with Thermo Electron Engineering Company, then an engineering firm of his own, and now "Shakuntla". Shakuntla, which means dancing princess, is a fine shop located in the new Prudential Plaza in Boston, specializing in clothing, furnishings, and objects of art from India. The business, started at the beginning of the year, has been so well received that Nari is planning a large Indian culture center to be located in the Boston area. Will have to drop in to see the activity. . . . After leaving Tech, **Michael A. Rickards,** XVI, pursued an M.S. in Aerospace Engineering at the University of Southern California. He has since been working at Weber Aircraft Company in Burbank, California, as Chief Scientist, involved in advanced concepts in the area of personnel escape systems. Michael is married to Georgette Equerme (from Belgium) and has three sons, all living in Sherman Oaks, Calif. . . . Dr. **Harry W. Linde,** V, is Assistant Professor of anesthesiology at Northwestern University Medical School in Chicago. . . . **John Hampshire,** IV-A, has left US Gypsum Company in Chicago and is now an architect living in Framingham, Mass., with his wife Martha Joan

and their two children. . . . Dr. **Marshal F. Merriam,** VIII, reports that he has accepted a position as Associate Professor in the Department of Mineral Technology at the University of California in Berkeley. Prior to this post Dr. Merriam was Assistant Professor of physics at U. of C. in San Diego. . . . Dr. **Mark S. Tobin,** VII, has been appointed Chief of the Section of Hermnatology, Department of Internal Medicine, Brookdale Hospital Center (affiliated with Columbia University) in New York. Congratulations Mark! . . . More news about Doctors—**William S. Floyd,** M.D., VII, is Assistant Professor of Obstetrics and Gynecology at Wayne State University School of Medicine where he is working under a research grant at new techniques for cancer detection. . . . We have heard that **Everett W. Hobart,** Jr., V, has moved from Connecticut to Ridgewood, N.J., to accept a position with Ledoux and Company consulting analytical chemists as Assistant Research Director. Ev and his wife Marianne have five children. . . . A book on microwave heating has been written by Dr. **David A. Copson,** XX, covering such topics as freeze drying and electronic ovens. Dave is Professor of Biophysics at the University of Puerto Rico, a nice place to be! . . . Two Course I men have been heard from—**David M. Berg** has moved his consulting firm to Needham, Mass., and **John E. Rempert** is involved in municipal engineering for the city of Torrance in California. John and Audrey have four children at the last count. . . . We are pleased to report that **Luis R. Lazo,** II, has been appointed President of Transport Dynamics, Inc., a wholly owned subsidiary of American Metal Products Company. He had been Vice-president and general manager of the company since April of 1965. The Santa Ana, Calif., company produces self lubricating spherical and journal bearings for military and commercial aircraft. Prior to joining AMP in 1963 Luis spent 10 years with Thompson Ramo Wooldridge, Inc. He is married and has three sons. We regretfully record the passing of **Eben O. Smith,** III, and of **Carolyn B. Parker,** VIII.—**Norman R. Gardner,** Secretary, 100 Memorial Drive, Cambridge, Mass.

Luis R. Lazo, '53

'54

The fall season finds **Bob Evans** (XIV), who has done such a fine job of reporting for this column in the past two years, as a visiting professor at Keio University in Tokyo. You can all help me pinch hit for Bob by showering me with newsy letters, cards, calls and visits if you happen to pass through the Carlisle, Mass., area.

Donald S. Bailey (XV) has just formed a real estate appraisal firm under the name Mates and Bailey in Sayville, Long Island, N.Y. The firm specializes in certiorari and condemnation proceedings as well as general real estate appraisals. . . . **George J. Bartolomei** (II) was named "Value Engineer of the Year" at the Society of American Value Engineers Convention in Miami Beach. George is Chief Value Engineer at the Solar Division of International Harvester, and resides in Chula Vista, Calif., with his wife Mary-Lou and children, Jeanne Marie and Christopher John. . . . **John Blair** (VI) has joined Raytheon Company as corporate director of research and scientific liaison. Dr. Blair had been associate professor of electrical engineering at M.I.T. and a member of the faculty since 1958. He was also a Ford Foundation post doctoral fellow. . . . **Jerry D. Canney** (I) is now a partner in the Mackin Engineering Company, a Pittsburgh, Pa., civil engineering consulting firm. He is in charge of structures. . . . **Francisco R. del Valle** (V) has returned to the Instituto Technologico de Monterey as professor of chemical engineering and head of the Food Technology Section of the Department of Food Technology and Marine Sciences after receiving his Ph.D. in Food Science and Technology back at M.I.T. . . . **Theodore Higier** (VIII) writes, "I am writing new chapters in human advances. With each day I literally take creative steps with my fellow man. A physicist has finally reached one of the goals of man, a marriage of the laws of science with the laws of society." Ted resides in Washington, D.C. . . . **Joseph W. Hurley** (II) has been appointed plant manager of the new Corning Glass plant in Canton, N.Y., which will manufacture fused silica products. Joe has been with Corning since 1955. . . . **Dean Jacoby** (XV) has left his position in M.I.T.'s student aid office to direct an effort aimed at providing an integrated data processing facility for the M.I.T. community. . . . **Rolf Kates** (VI) has been named manager of applications and systems in the market planning department at Honeywell's Electronic Data Processing Division, Wellesley Hills, Mass. He resides with his wife Ellen and sons, David and Jeffery, in Framingham, Mass. . . . **Helmut J. (Jack) Maier** (X) has been named manager, instrument systems engineering, at Mine Safety Appliances Company, Pittsburgh. He will be responsible for the recently combined functions of the applications, systems engineering and instrument calibration groups. . . . **Carl W. Nelson** (V) has been appointed solid state physical chemist for materials research at Huggins Laboratories, Inc. Carl will provide a liaison between industrial processes and radiation detection for purposes of instrument design. He holds basic patents on thin films of the platinum group and their oxides used as elements in precision instruments. . . . Dr. **Philip S. Rane** (XX) has just completed his Army service including a year in Viet Nam and is going to practice Radiology in Quincy and Randolph. He resides with his wife Maraline and three children in Needham. **Anthony R. Romano** (I), who is general manager of Springfield Central Business District, Inc., described proposed downtown projects as guest speaker at a Rotary Club luncheon. He is presently in charge of a 31 million dollar project in Springfield which will include a shopping mall, office buildings, hotel, parking garage and bus terminal. . . . **Arthur Sargent,** Jr., (XIIB) has received a Master of Science Degree from Rensselaer Polytechnic Institute in Troy, N.Y. . . . **Fred Zappala** (VIII) is now high above the Hub as a manager for Peat, Marwick and Livingston, a management consulting firm located in Boston's new Prudential Building. Class Alumni Day attendees included Bill McTigue (I), Bob Wagner (VI), and Dick Mills (XV) and their wives and Dean Jacoby (XV).—**E. David Howes, Jr.,** Acting Secretary, Box 66, Carlisle, Mass.

Helmut J. Maier, '54

'55

Greetings! Commander **Robert Eustace** wrote last May that he was looking forward to his transfer from Norfolk during the summer to the U.S. Naval Ship Repair Facility in Yokosuka, Japan. . . . **Ben Dysart,** a senior space engineer at J.P.L., and his wife and two children live in Pasadena where they are active in the Soaring Club and the Model T Club. They recently journeyed to Zion, Bryce, and the Grand Canyons in a "T". . . . **Colin Robertson** was temporarily assigned as a resident engineer at the U.S. Naval Postgraduate School Laboratories in Monterey, working on a model testing program; he expected to return to Sacramento in September. . . . From Drumright, Okla., **Daniel Kiser** writes that he is a partner in the Quapaw Company, selling crushed limestone aggregate, agricultural lime, and asphaltic road materials. He is now father of three children. . . . The Rev. **William H. Nichols,** S.J., assistant professor of physics at the University of Detroit, was scheduled to participate in the Brandeis Summer Institute of Theoretical Physics last summer. . . . **David Prongay** and Joan and their son and daughter live in Huntsville, Ala., where Dave works for Boeing on flight evaluation for the Saturn 5 . . . **Michael Halpern** is still building houses and developing land in "the best real estate city in the USA", that is, Atlanta. He and his wife find time to enjoy their activities in a local professional theater group, as well as those with their three boys. . . . **Dale Madden** began working at the Booz-Allen Applied Research Laboratories in Bethesda, Md., in May, primarily in applied statistics. He is also studying for an M.S. in mathematical statistics at George Washington University. . . . "The end of

moonlighting" for **David Snider** came in June, when he received his M.S.E.E. from Drexel. He reports getting reacquainted with his wife and four offspring, also seeing **Robert Buntschuh** and **Alicia Larde Nash** often at RCA Astro-Electronics Division in Hightstown, N.J., where all three work. . . . **Richard Bergman** is nearby, director of engineering and development at Princeton Chemical Research. . . . In the Philadelphia area **Thomas Reiner** is a professor at the Wharton School of the University of Pennsylvania; **Franklin Davenport** is doing helicopter R&D at the Vertol Division of Boeing in Swarthmore; and **John Gahran** has been appointed plant manager of John R. Evans and Company, Camden, N.J. leather processors. John received an M.B.A. in Industrial Management from Temple in June. . . . **Robert Kimball** writes from Waterbury, Ct., where he is a senior production engineer with Anaconda Metal Hose. He went to Korea as a Marine sergeant after leaving M.I.T., then finished his B.S.M.E. at the University of Massachusetts in 1959. He and Kathy have two sons. . . . **Rodney Logan** returned from Vietnam in July, 1965, and spent last year teaching ROTC at Worcester Poly. . . . In addition to founding Microtek Electronics in 1965 **John Woulbroun** became the father of twin girls! He and Peggy and the children now live in Cambridge. . . . **Marsbed Hablanian** has been appointed manager of product development of National Research Corporation. He and his wife and two children live in Wellesley. Back in the Boston area, in Sherborn, are Edie and **Robert Greene** and the harem. Bob is now administrative aide to the Dean on Engineering at M.I.T., where his work includes administration of cooperative programs with universities in Germany, India, and South America. Perhaps your Boston correspondent, who was there, will report on the 1955 turnout at Alumni Day next month. Please add us to your Christmas list meanwhile!—Co-secretaries: **Mrs. J. H. Venarde (Dell Lanier),** 16 South Trail, Wilmington, Del. 19803; **L. Dennis Shapiro,** Aerospace Research, Inc., 130 Lincoln Street, Boston, Mass. 02135

'56

About noon on Friday, June 10, 1966, I left the office for home. Soon **Max** and Rochelle **Plager** arrived, and with my wife Marion we left for the Wychmere Harbor Club. Once on the Cape we followed the reunion signs to the Club. Arriving in a drizzle (just like the 5th Reunion) we ducked under the big welcome banner into the lobby to register. **Ted** and Diane **Korelitz** (Hospitality Vice Chairman) and other members of the committee were waiting to greet reunion attendees. **Roger Borovoy** and **Herb Katz** were on hand to help snap Polaroid color photographs of classmates and wives. **Bob Malster** was able to borrow some new pack cameras from Polaroid and was gracious enough to provide a couple of dozen Olm packs himself. Back into the car, down to the main Club buildings and to our rooms to drop the luggage and freshen up. Of course there were the usual mixups in room assignments. The **Bachmans** and **Massas** attempted to obtain adjacent rooms, but Ron and Lorry Massa found themselves in singles (quickly corrected). **Jay** and Erica **Ball** have since told us that they think they ended up with those rooms. . . . On to the central meeting hall where **Bob** and Joan **Malster, Guy** and Lee **Spencer, Lloyd** and Ruth **Beckett** were planning last minute details of the entertainment, recreation and banquet. Soon **Bill Grinker** and **Mickey Reiss** arrived to open the bar for free beer. That brought the crowd fast, and who cared about the wet weather. Time to renew the old friendships and greet each new arrival with a shout. **Ray Bowen** showed up with a horrible swollen black eye which he contracted the previous week at a University of Wisconsin student-faculty touch football game. . . . On to the cocktail party. The informal evening program did not require a change of clothes. By dinnertime almost two thirds of the 1960 classmates, wives and guests were on hand. We moved into the large dining room for the first of our excellent meals—choice of the menu (steak, lobster, etc.). **Mat** and Mary **Barrett** joined our table and brought us up to date on Ft. Worth, Washington, and aerospace. Catching up with the late arrivals, **Ted Korelitz** soon had a bulletin board full of color pictures (secretly used as ID cards to match those receding hairlines and larger belts to the old familiar names.) A brief welcome, clear away the remains of supper, move the tables back a little and bring on **Lloyd Beckett's** GO-GO girls for the Disco-Tech. Believe me, you have to be relaxed to do those dances. I see **Jack Rosenfeld** is changing his dancing style. **Al Lorber** (Nipomnich), weren't those girls great? Later, there were the small parties continuing well into the night.

Saturday morning arrived cloudy and cool—everyone up for breakfast at 7:30 A.M. (ghastly hour). **Bill Dickson,** Activities Vice Chairman, provided a broad choice of activities: volleyball, sightseeing, bull sessions, bridge games, tennis, deepsea fishing. **Ron Massa** relates that the main adventure of the fishing trip was the boat captain teaching those aboard how to scare large numbers of seagulls into flight. It seems that you gracefully flap your arms while rising as if to fly. Works at distances over 100 yards. Lunch was another choice-of-the-menu meal. **Jim** and Betsy **Fleming** were at the table and we got in a few remembrances about another college we attended. The Saturday afternoon event was the wild beer baseball game. Scene: the beach with left field in the ocean to slow down those speedy base runners. However, **Warren Briggs**, who had flown in from a California business trip that morning, was off to Hyannis to take care of last minute details for the banquet. Notable quotes of the day: Dr. **Steve Cohen,** pressed for free medical advice, retorted, "strip down and I'll have a look see." Lawyer **Jesse Rothstein,** to an anxious inventor, "Forget it, you can't afford the patent legal costs."

Time passed quickly and we rushed back to the room to change for free cocktails and hors d'oeuvres, courtesy of the class. More late arrivals including the **Najjars** and **Pollards**. Finally, the main event of the reunion—the class banquet, an exquisite roast beef dinner. **Bill Grinker** was master of ceremonies for the program: **Jack Saloma** arrived fresh from the Massachusetts Democratic Convention to nominate the slate of class officers for the next five years, President, **Bob Malster;** Vice-presidents, **Bill Grinker** and **Mickey Reiss;** Treasurer, **Lloyd Beckett;** Co-Secretaries, **Bruce Bredehoft** and **Guy Spencer;** Class Agent, **John Morefield;** Alumni Council Representative, **Warren Briggs.** The expanded team intends to put forward an active program. With your support we hope to include some regional meetings. The Class awarded trophies to: **Nelo** and Eva **Sekler** for flying in from Venezuela to attend the reunion. Honorable mention for **Jim Calder** who contracted jaundice and was laid up in a London hospital on his way from Greece, and also **Margolia Cohen Gilson,** whose children contracted chicken pox at the last moment. Dr. **Ira Polevoy** was given the Class Patriot trophy for just being drafted into the Army, **Irwin Gross,** the class athlete, for charging into the surf to catch a fly during the afternoon beer baseball game, **Don Bavly,** the class swinger, for his outstanding frug during the Friday night Disco-Tech.

Don Bavly gave a spirited and humorous presentation of the results of the class profile questionnaire. Don wrote the computer program and compiled the questionnaire statistics. Mementos were presented to the Vice Chairmen of the reunion committee for their hard work. Wine decanters were distributed to attendees as mementos of the reunion. Finally, **Bill Grinker** introduced the featured speaker of the evening, Dr. Bruno DeAngelo, Visiting Professor from the University of Milano. Dr. DeAngelo launched into a discussion of the American way of life calculated to raise the hair on a beaver's neck. Only after 15 minutes did the class become aware that the Professor was really a retired Irish policeman from Watertown. The formal program was closed and the dancing began, music provided by a combo in the main dining room of the Club. Had a long talk with **Howie** and Marily **Bertan** at a quiet corner table. Then again on to those small all-night parties. **Phil Trussell** showed up with his own ash tray—a three feet high 75 pound chunk of concrete. At 2 A.M. we were still finding rooms for the late arrivals like the **Shefrins.**

Sunday morning the sun was shining and breakfast was at 7:30 A.M. again. Then walks on the beach and jetty, a swim in the heated pool, relaxing in the chaise lounges on the terrace. Finally, as **Paul Cianci** described it, one last chance at the free Michelob beer, beer, beer. Climaxing a weekend of superb cuisine, we ate a lunch of steamed clams, boiled lobster, and fried chicken (resulting in a happy group of stewed stuffed classmates.)

Dan Wolfson shared our table and we shared his steamed clams (some people don't understand those delicacies).

Before closing the weekend, there were final reservations for Alumni Day in Cambridge—which enabled us to have our largest turnout in history at that event. However, while most of the attendees then left for home to rest, the reunion committee stayed to wind up details and plan for the next five years of activities. There were many more memories and a lot of people I didn't mention such as **Tuure** and Nancy **Wirkki, George Garfinkle** and his Boston architectural firm—but then they don't want me to fill the whole Review. When you get the questionnaire report, don't forget to send back the yellow questionnaire to help with these articles.—Co-Secretaries: **Bruce B. Bredehoft,** 16 Mill Brook Road, Westwood, Mass. 02090; **T. Guy Spencer,** Jr., M.I.T. Alumni Association, M.I.T., Cambridge, Mass. 02139

'57

Would you believe . . . our 10th reunion is next June? That's right! The weekend of June 9, 10, and 11 is the date to remember. The place: The Jugend in the Berkshires. Your reunion committee has chosen this beautiful and convenient resort because of its unparalleled facilities. 1600 acres of lush, green, rolling New England countryside. Every possible sport —tennis, golf, swimming, sailing, waterskiing, skeet shooting, horseback riding, or just plain hiking. In addition, the reunion committee is planning an entertaining program for both Friday and Saturday evenings. A mailing will be coming out shortly with more details. If this doesn't reach you, write to **Malcolm M. Jones,** Sloan School of Management E 53-383, M.I.T., Cambridge, Mass., for complete details. Plan to be with your classmates June 9, 10 and 11, 1967, at Jugend in the Berkshires.

With this month's column the inclusion of supplementary notes about our 10th reunion, prepared by a member of the reunion committee, will be initiated. I have some news on the reunion to report, however. In addition to those listed in the last issue, the following classmates have indicated they hope to attend: **Dick Blieden, Robert Bridgham, Peter Card, Richard Carson, John Crews, Jim Cunningham, John Currie, Allan Donaldson, Bill Doughty, Harry Flagg, Edward A. Friedman, R. W. Griffin, Carl Hagge, Robert Heitman, Mal Jones, Hugo Liepmann, Charles Murray, Morton Rosenstein, Peter Samton, Leslie Thomas** and **Barnet Weinstein.** I hope to be there too.

Edward Friedman wrote the following: "In June 1963 I received my Ph.D. in Physics from Columbia University and took a position as Assistant Professor of Physics at the Stevens Institute of Technology in Hoboken, N.J. I taught at Stevens and did research on neutron scattering from magnetic materials at Brookhaven National Laboratory until June 1965, when I left for Afghanistan. Stevens is a member of an 11-university consortium which is helping to develop the Engineering College of Kabul University. I expect to return to Stevens next year in time to attend our reunion. In January 1963 I married the former Arline Joan Lederman of New York. We had our first child, a boy named Millard Timur, here in Afghanistan last August. Arline is studying the crafts of Afghanistan and painting. Millard is studying everything and is now a specialist on the Khyber Pass which he has traversed several times. I heartily recommend participation in international development programs to all of our classmates. If any do come in this direction, I offer to act as regional reunion representative for Central Asia."

It has been determined that I will be staying here in London with Mobil Oil for the next two years or so. My new address is given below. I would enjoy very much seeing any of you if you get through this way. My home telephone number will be 2352720. On May 29 my engagement to Miss Betty Louise Kramer of Hoenderloo, Holland, was announced. Betty and I met through mutual friends early in March when I was first transferred to Europe. By the time these notes are published we will have been married; the date is September 24. . . . **Mal Jones,** who, many of you know, has been a very close friend of mine since our days together in Sigma Chi, left the bachelor world on June 18 when he was married to the former Miss Jill Weaver. **Jay Hammerness** was Mal's best man. Ann and **Bill Brandon,** Joanne and **Bob Green** were among the guests at Mal's wedding. Jill is a commercial artist doing free lance work, and Mal is an instructor at the Sloan School of Management teaching computer courses. . . . I have a large amount of news for next month's issue but look forward to anything you can send to cheer me through what will be a cold, damp winter here in London.—**Frederick L. Morefield,** Secretary, 18 Whaddon House, William Mews, Lowndes Square, London S.W. 1. England

'58

Here we are again after a busy summer during which the mailbag gained some weight. Not enough to justify a news starvation diet, however, just enough to get the column rolling. By the way, an amusing incident occurred this summer which demonstrates one of the joys of a class secretary. Talked with one of our classmates who noted that the class news has been a little sparse. I checked our files and . . . you guessed it . . . we haven't heard from him since graduation! Ah . . . well, Received a letter over the summer from **Hal** and Sandie **Samuels** in Scarsdale, N.Y., where they have just purchased a new home. Hal, that clever fellow, had Sandie write the letter (you non-correspondents take note). They write: "We eagerly read the class column looking for names we know and thought we would drop you a line and tell you about the class members with whom we keep in touch. About us, first of all. Hal has a Master's from Columbia and some doctoral work at Princeton. He has been with IBM and General Foods and currently is at Ogilvy and Mather advertising agency in NYC where his position is manager of computer applications. I am a Douglass College graduate and also have a Master's from Rutgers. We have two boys, Scott, five, and Steven, two and one-half. Hal and I would enjoy hearing from any Westchester M.I.T.'ers. We frequently see **Bill Dreier** and family. Bill is a Columbia Law graduate and is a partner in a law firm in Elizabeth, N.J. Bill and his wife Sandra live in Plainfield and have a little girl, Susan, age two. Bill is active in politics and is a councilman in his district. While we lived in Plainfield, we lived in the same garden complex as **Dean Collins.** He was with Bell Telephone Labs in Murray Hill, N.J., but I believe he went back for a doctorate at Michigan. Dean and Sandra had one boy at the time. We also occasionally see **Sandy Nobel** and his wife Marge, along with their two boys, Andy and Gary. They live in Buffalo where Sandy is an important asset to the Deffler Corp. They usually come to NYC once a year and we see them then. Our neighbors in an apartment complex in Hartsdale were **Sandy** and Judy **Israels.** Judy is a B.U. graduate. Sandy is with United Nuclear in White Plains. They have two boys, Michael, five, and Steven one. When Hal is in the Chicago area he talks with **Stu Pinsof.** Stu and Evie have two children. Stu, I believe, has his own manufacturing firm in the Chicago area." **George Haines** has been appointed to the faculty of the University of Rochester as an assistant professor. Following M.I.T. George received both an M.S. and Ph.D. from Carnegie Institute of Technology in economics. He has had several papers and articles published, most recently "A Model for Allocating Joint Advertising Costs" in Advertising Research. George will be leaving U.C.L.A. to accept his new position. . . . Another faculty appointment is **Peter Lawes** as a mathematics instructor at Oakland University in Michigan, which is affiliated with Michigan State University. Prior to this appointment he taught at Lower Canada College after earning an S.M. at M.I.T.

Our peripatetic associate editor on the west coast flew east and ran into some of our class. Toni reports ". . . was in New York a few weeks ago and ran into **Hillel Auerbach** on the subway. He works for Casey, Lane and Mittendorf specializing in tax law. His home is now in Forrest Hills where he lives with his wife and two children, a girl four and a boy two. Among his other activities he is a director of the Yale Club of Queens. . . . At the Joint Computer Conference in Boston I saw **Joseph Gal** who is now living in New York on 68th street. He married the former Antoine Hess of Wellesley (and IBM) and is now a vice-president of the investment banking firm of White, Weld and Company. . . . **Jim Benenson** is with Walker, Hart and Company in the investment banking business. It really looks as though M.I.T. men prefer Wall Street to engineering."—**Michael E. Brose,** Secretary, 205 Pine Street, Tecumseh, Mich.; **Antonia D. Schuman,** Western Associate, 22400 Napa Street, Canoga Park, Calif.

'59

Yea verily and forsooth, tis a long time since '59 class notes have appeared in these columns. While most of the credit goes to the Review vacation, the rest can be traced to simple lack of news. I know you guys are out there somewhere, and I'll track you down yet. One benefit of the long vacation is an accumulation of news clippings at least. This month I find myself nearly buried under an avalanche of them; however, to prevent typing headaches for me, reading headaches for you, and a possible gap between '58 and '60 next month, I shall delay printing some of them. Also, I am happy to say that I have a few items this month that were not acquired through the Review clipping services.

Even with the stench of the Charles River and Mass. politics, there is something about this area that keeps bringing people back. One of the latest additions to the list of returnees is **Bob Williamson** who is settling down here with his wife, Sue. After spending several years in space vehicle design at McDonnell in St. Louis, during which time he accumulated an amazing number of zero-G flight hours, Bob will be doing computer exterior design and layout work for Honeywell; Sue will be teaching math in Framingham. Quite a sports car buff while at M.I.T., he's settled for an air-conditioned VW now, cars taking a second place to his new hobby of light-plane flying. The next move, he tells me, is parachute jumping. While in St. Louis, Bob and **Leon Glicksman** saw a lot of each other, combining technical talk with squash-playing. It looks like those squash contests may continue unhindered by distance since Leon is another very recent returnee, having doffed his military uniform in favor of M.I.T.'s academic robes.

Always a source of information about classmates is the Alumni Officers Conference held at the Institute each September. Representing '59 this year were **Larry Bishoff, Kent Kresa, Dick Sampson, Ollie Seikel,** and yours truly. Larry, at the time of this writing, is being kept very busy in his post of Director of Dining Services and Dormitories at M.I.T.; the Institute has acquired an apartment house on Central Square for use as a dorm, and Larry was still fighting to get the place furnished as students were arriving for Rush Week. Kent had no sooner arrived in this country from an outpost on a Pacific atoll with Lincoln Labs than he was asked to head up the new '59 Special Gifts Committee; it's a new concept setting up such a committee in so young a class, and Kent isn't exactly being overwhelmed by $100-plus donors. Ollie arrived in Boston in style, flying a newly-acquired Cessna; he's an attorney in Cleveland and was representing that city's M.I.T. club. Dick brought word that **Tip Noe** and his wife are both working for the CIA in Washington; it seems that Tip isn't talking much these days. Dick is still administrative officer of a very busy Civil Engineering Department here at the Institute and is handling the reins of the local Sigma Nu alumni group as well.

Congratulations go this month to **Walt Humann,** who has been awarded a highly-coveted White House Fellowship. He was one of 18 selected from a field of more than 600 applicants, all of whom had in turn been selected in individual contests in the business, technical, civic, and academic communities. Walt began a one-year internship in September as a staff assistant in the executive branch of the government. He holds an M.B.A. from Harvard and was in his third year at S.M.U. law school when tapped for the fellowship. Last August he became a licensed attorney-at-law. Since 1963 he has served in the Project Management

Walter J. Humann, '59

and Engineering Departments of Ling-Temco-Vought, and for the last year has been owner of Gift-O-Fruit, a Dallas retail firm. Walt and his wife Beatrice have a four-year-old son, Walter.

Heartiest congratulations also go to those who have received their doctorates this year. Among them are **George Fisher,** University of Illinois; **Herb Kline,** Brown; and **Al Kniazzeh,** M.I.T. George is an assistant professor of physics at University of Colorado, and Al is in the power conditioning and distribution laboratory at the NASA Electronics Research Center in Cambridge. . . . In the less pleasant side of the news, I report the death of **John Strano,** a victim of suicide last May. John had received his doctorate in physics from Yale and was employed at AVCO in Wilmington, Mass.

As mentioned earlier, I shall withhold the bulk of the news clippings for future publication. Before signing off though, I want to mention GSO class members **Tom Lynch** and **Ed Nawy** who have written me. Tom, a graduate of CCNY who received his M.S. in Electrical Engineering from M.I.T. in '59, has been awarded a Ph.D. in E.E. from the University of Maryland. Ed has been promoted to Professor of Civil Engineering at Rutgers, has been elected President of the New Jersey Chapter of the American Concrete Institute for the coming year, and has been awarded a citation from the New Jersey Concrete Association for "untiring devotion and leadership in the field of concrete education." Thanks to both of you for writing.—**Glenn W. Zeiders Jr.,** Secretary, 3 Rose Avenue, Watertown, Mass. 02172

Capt. Leon R. Glicksman, '59, receives congratulations from Brig. Gen. Howard F. Schlitz as an Army assistant attaches his new insignia.

'60

Greetings. I've just returned from the Alumni Officers' Conference at M.I.T. **Tom Farquhar, Art Silverman** and **Sue Schur** were also there from '60, a fine program if any of you have a chance to attend next year. I'm sorry to report the death of a classmate: **Edwin Hetrick** was killed in a plane crash in the Bahamas in December, 1965. I have no further information; his mother's address is 615 Union Place, Fremont, Ohio.

We received a number of letters over the summer. From **Dave Straight:** "As of April, I left the Research Staff of the Sloan School and went to work for IBM. I am in the Federal Systems Division in Cocoa Beach, Fla., doing planning and scheduling on the Saturn Program. We are all enjoying life here in the 'land of the lotus-eaters.' Anna Lee and the three kids all have glorious tans; my own suffers from the apparent reluctance of the sun to shine on weekends. Most of my spare (?) time is spent working on my Sunbeam

Alpine which I have set up for racing. I hope to get my SCAA Competition License next month. We would love to see any of the old gang who get down here to missile land." Thanks, Dave. And now from sunny Florida to (presumably) also sunny California. . . . **Al MacLaren** writes, "My wife, Devonne, graduated from the College of Great Falls (Montana) in February 1966. On July 15 I'll receive my M.S. in Aerospace Engineering from the Air Force Institute of Technology (AFIT) after three years of moonlighting. In October I'll be reassigned to the 6595th Aerospace Test Wing at Vandenbert Air Force Base in California as an Astronautics Engineer working on the Manned Orbiting Laboratory. Short and sweet, especially that MS." And Al adds, "Oh, yes, child number two is expected in August."

In July I received a note from Sally **Oeler;** "to announce the arrival of Kurt Richard Oeler on 24 June. **Dick**'s mother came to bail us out after the first week and he was quite happy to turn over his dishpan and vacuum cleaner to her. . . ." **Stephen Pollock** is now living in Carmel, Calif.; he was appointed Assistant Professor of Operations Analysis at the U.S. Naval Postgraduate School in September 1965. . . .**Harry Hopfenberg** writes, "I am presently fulfilling my two year ROTC obligation in Vietnam—let's just say I'm the Class of 60's representative in Vietnam. I'm stationed with the Army Concept Team in Vietnam (ACTIV) in Saigon." Harry's wife and children are in Scarsdale, N.Y. . . . **Joseph Reeves** is in Los Angeles working as a chemical engineer for Southern California Edison Company; he's on the San Onofre Nuclear Generating Station. . . . **Larry Brock** received his Ph.D. from M.I.T. in June 1965 and is now a 1st Lieutenant in the Air Force working as an Astronautical Engineer in the Central Inertial Guidance Test Facility at Holloman Air Force Base, N.M. . . . **Pat Spangler** writes, "I have spent the past year as an assistant professor in the Nuclear Engineering Department of Kansas State University. This June, after a grand tour of the western part of the U.S.A., I will move to Newport Beach, Calif., to take a position with the Aeronutronic Division of Philco."

Richard Wachsman is now a senior engineer at ADCOM, Inc., in Cambridge. He recently co-authored a paper with Ajmad Ghais which was presented at the 1966 National Telemetering Conference. He is now living in Arlington, Mass., with his wife Nancy and two children, Robert (3) and Carol (1). . . . **David Perry** has filled us in about his activities since 1960: "Two years at the University of Massachusetts Graduate School (1960-62, MA in sociology), two years in training in psychodrama and group psychotherapy (1962-64) at St. Elizabeth's Hospital in Washington, D.C., two years of postgraduate work (1964-66) at Howard University, will enter the University of Maryland School of Medicine in September, 1966, will be married in June, 1966."

Robert Stoeckly is now an assistant professor of physics at R.P.I. . . . **Lon Shrier** spent the past academic year as a visitor in the Department of Chemical Engineering at Cambridge. He is now back at ER and E doing engineering research and consulting. . . . **Ken Freeman** has been appointed Assistant Professor of Philosophy at Bowdoin College in Brunswick, Maine. . . . Captain **Robert Burton** is on sabbatical from the U.S. Air Force Academy as a consultant to the Assistant Secretary of Defence for Systems Analysis. . . .**Silas Allen** reports, "Married to Barbara Burkinshaw of Chelmsford, Mass., received Ph.D. in E.E. from Tech, presently on a post-doctoral appointment at Bell Telephone Laboratory." . . . I've got lots more news, so don't miss next month's thrilling installment in this protracted story of "What ever happened to good old . . .??"—**Linda G. Sprague,** 345 Brookline Street, Cambridge, Mass. 02139

'61

Reunion Report. I am sitting here trying to figure out a way to describe a successful reunion without being too corny. It ain't easy. But here goes: Friday was a day to shake the very soul of the most stalwart reunion chairman. There was about an inch of rain in Boston coupled with angry shafts of lightning and a foreboding sky at dusk—typical Massachusetts June weather. In spite of the omens from the sky about a dozen intrepid classmates along with their wives arrived at Clausons. They adjourned to the bar and pondered past, present and future. **John Baxter** was among the early arrivals. He must win a gold star or something for long distance, coming all the way from Pasadena where he toils for National Cash Register.

By the time Helen and I arrived on Saturday the sun was visible and several groups had taken advantage of the golf course and the tennis courts. But no one was on the beach; a chilly wind had taken care of that. **Tom Geers** and wife Brenda reported that the course was a pleasure to follow although the holes looked tough to a duffer like me. Tom was able to find a weekend baby sitter for his two children Lorri Anne (2½) and Jeffrey (½). Tom is still at the Institute in mechanical engineering and is finishing up on a thesis in a basement in Building 7. Sitting inside the front door of Clauson's was a registration desk manned by Murry Sachs, '62, and his girl. Apparently it is tradition to have next year's reunion people come and observe and do the coolie work. A little Polaroid camera was set up to take pictures of people as they arrived. It was a mixed blessing, most pictures giving a rather distorted representation. But you could look at the gallery and see who had arrived and learn to join name with faces and wives with both. You couldn't tell it from the pictures but it was a pleasant surprise to find that our grubby boys had wound up tied to some very fine specimens. By 5:00 nearly 100 people had shown up and were happily imbibing 90¢ drinks in the bar. There was a tendency to break up into dorm and fraternity groups as you would expect. **Pete Gray** was presiding over a very worried group of people out on the front lawn. He had been given the job of heading a nominating committee. Pete is finishing up his professorial duties at M.I.T. and moving south to Philadelphia where he will make like a real electrical engineer at General Atronics, a small flourishing company specializing in exotic matters such as submarine detection (shh!).

All through the day I had expected to see a great deal of glad handing and drunken brawls but such was definitely not the case. Five years after we seem to all be serious minded young men and women just starting carriers and families. At the dinner table we were confronted by little packs of cards with 1961 proudly written on the back so that it read either way. Helen had put little gray and red carnations for the ladies at each place. Otherwise the "gung-ho" aspect of the reunion was minimized. We sat down next to **Ed Sonn** and **Pete Buttner** and their wives. Both couples were just down for Saturday. They had managed to get in some tennis and stayed on for dinner. Pete was still practicing evil looks to be used in turning people down for loans at the M.I.T. aid office. His wife Marianne was looking a bit worried since this was the first time they had been away from nine month old Karl for more than a few hours. Pete related that they had been married just after graduation on July 1, 1961. Marriage notwithstanding he was whisked off into the army after two weeks. They spent nearly two years in Wurtzburg, Germany, with the 123rd Signal Battalion and then, changing into civvies, moved to Bethesda, Md., where Pete worked for IBM. The call of M.I.T. was too much and he returned in June 1965 as the assistant director of student aid. Every time I visit him in Building 5 my heart is broken by the sight of sobbing graduate students who just want another six months. Helen was gratified to see another obviously pregnant girl at our table. She was Maybeth Sonn who has since produced Paul Sonn. Ed has stayed at M.I.T. since graduation, working on guidance problems at labs.

Among the latecomers to dinner were **Fred Schmitt** and his date and **Paul Schweitzer.** Paul was muttering about the vicissitudes of working for the Institute of Defense Analysis where he has been since he got his Sc.D. from M.I.T. They don't seem to like people taking Friday off and it was quite a drive from Washington (really Arlington) in one day. Fred also came from Washington where he too works for the government. After he got a master's from the 'tute in Chemical Engineering he moved to the chemical corps of the army at the Pentagon. In August, 1965, he then moved on to the civilian side of things.

Sandy Wagner got up after dinner, looking a bit embarrassed, made a few announcements on coming attractions, and then turned over the meeting to **Pete Gray** who disclosed the nominations. All the names sounded familiar and were duly voted into office for the next five years. Results: President, **Ira Jaffe;** Treasurer-Vice-president, **Tom Hastings;** Secretary,

Andy Braun. Ira got up and thanked the reunion committee, and the formal proceedings closed. **Sandy Wagner,** besides emceeing, has been at the Browne and Nichols School in Cambridge since graduation as a teacher-coach, but this September he returns to academia and starts the grind to advanced degrees in math and education at Wesleyan.

Any lingering doubts as to the pulchritude of M.I.T. wives were dissolved when the twisting started. But master of the twist was, without question, **Leo Cannon** who still resides in Massachusetts working for Lybrand Ross Brothers and Montgomery. The Brauns just sat it out along with **Ed Strachan** and his wife Liz. Ed regaled up with stories of the great Midwest and Iowa University. Ed now has returned to the East, living in Orange, Mass., and working at Riveto Mfg. Things pretty much broke up around 12, and I suppose everyone went to sleep. At least they were nowhere to be seen; the bar was filled with townies.

Sunday was a bit warmer and it was back to the golf course. **Bob Creasy** and **Dick Spann** got some old golf balls and a couple of drivers and tried sluging a few over a driving range. Little did their wives, Ros and Annette, realize that they would be pressed into service shagging the balls all over the field. Bob keeps telling me that he has left Project Mac at M.I.T. and has moved to IBM in Tech Square in Cambridge, and I keep forgetting. He told Helen that they were thinking of packing up and moving to Hawaii, but I don't believe it. Bob and Rosalind have two kids, Bobby at four years and Laura Lynn at two. **Dick Spann,** whose golf swing is more impressive than the length of the drive, remains at M.I.T. for the duration working for a degree in Course VI. What passed as a volleyball game on the front lawn quickly proved how fat we had all become and eight of us provided a couple of laughs for the ladies. **Don Marquis** was one of the few competent players. He wrote on the class information sheet that "after graduation I got married and started work at UNIVAC Division of Sperry Rand in Boston. Moved to Melrose where Sandy taught second grade. In 1963 we bought a house in Needham and in 1964 I took a job at Weyerhauser (the Crocker Hamilton, originally Crocker Burbank, in Fitchburg since 1826) and moved to Leominster where we now live." Don finished his army reserve committments in November, 1964, being "mostly a supply sergeant for the Topographic Battalion, Drafting Company. 'Graduated' as a staff sergeant." **Steve Plafker** was also a hero of the volleyball fiasco. Earlier he had left me behind in his explanation of his doctoral thesis. It dealt with a space that was even more abstract than Hilbert space . . . and for those of you who care a Hilbert space is pretty abstract. He started his thesis work at Penn., but when his advisor was snapped up by U. of Illinois (Urbana) Steve went along. So his Ph.D is from Illinois. Now he moves on to teach at Tulane in New Orleans.

Around 1:00 a clambake was set up by the lakeside and any weight lost in the preceeding athletic events was quickly regained. The caterer brought enough food to feed an army: clams, lobster, chicken, chowder, beer, knokwurst (maybe it was a fat frankfurter), corn, rolls, all in vast quantity. **Henry Gabelnick** had retained his lean form through these five years so we decided to sit with him in the hope that he would set a proper example of moderation. He didn't. But he did say that he had finished up at Princeton this June. He had abandoned his senior thesis topic on the rheology of human blood for the less ghastly topic of enthalpy processes. Remember enthalpy? It was good old "H" in P. Chem. Now he and Faith leave the suburbs of Trenton and move to Monsanto Chemical and Amherst Mass. Finally around 3:00 Helen and I staggered to the car and started home, giving **Dave Sachs** a ride. He told us his tale of woe about the problems of living in a co-ed dorm at Tufts and of his work in theoretical physics. He will end up with a doctorate soon and then go into teaching, partly because he has found that industry is not too interested in elementary particle physics; just won't sell they say.

And that was the reunion as we saw it. It wasn't the greatest thing on wheels but it was pleasant and it was worthwhile. We met many people we knew from past years and caught up second hand on the activities of those who couldn't come. We met several interesting people we had never seen before, and look forward to seeing them again. The golf, tennis and volleyball may not have been professional, but they were a change from life behind a desk. We'll go again in five years. —**Andrew Braun,** Secretary, 1038 Beacon Street, Brookline, Mass. 02146

'62

Today is Labor Day and I'm writing this news in California. In June my wife and daughter and I were transferred by Oceanic Properties to San Francisco, where I am assistant manager of West Coast operations and assistant treasurer. Of course by the time this article is printed I may have been shifted again, but that will be a subject for later. I hope it's been an enjoyable summer (and fall) for all of you and that you're all beginning to think about our reunion next June.

Phil Kupritz was named an associate of the Perkins and Will Partnership, an architectural firm in Chicago. He is married and has a son, Craig. He is currently designer of an elementary school, the Noble-Division Redevelopment in Chicago, and the Villa Madonna Master Plan in Covington, Ky. . . . **William McCrea** made a full-length movie entitled "Europe in Your Own Car." His essay on the Cuban revolution won the National Literary Award in 1960. As an engineer he has pioneered in the jet-powered helicopter and is now concerned with advanced research films for the National Science Foundation. . . . **E. Robert Schildkraut,** in conjunction with **Harold E. Edgerton,** authored an article entitled "Blood Flow in the Microvasculature of the Conjunctiva of Man" in the February 25 issue of Science. . . . **Robert Breuer** is principal urban planner in the subdivision of transportation planning and programming in the New York State Department of Public Works. . . . Captain **William E. Yates** of the U.S. Army was selected to appear in the 1966 edition of Outstanding Young Men of America. The annual biographical compilation is sponsored by the Montgomery (Ala.) Junior Chamber of Commerce. . . . **Sheldon J. Hoffman, John LaGraff, Donald Pennell** and Mrs. Pennell, and **Joseph Rapaport** attended the 1966 Alumni Day ceremonies as representatives of the class of 1962. . . . **Stephen J. Warner** graduated first in the class of 1966 M.B.A.'s at the Wharton Graduate School of Business at the University of Pennsylvania. He was married to Miss Judy Kneen of Ashtabula, Ohio, on May 21 and he is now a management consultant at Arthur D. Little, Inc. in Cambridge, Mass. . . . **Robert V. Zara** received a Master of Science degree with a major in Physics in June from Trinity College in Hartford, Conn. . . . Dr. **F. B. Sprow** was co-author of two articles in Transactions of the Faraday Society. One was on "Surface Tensions of Simple Liquids" and the other on "Surface Tensions of Simple Liquid Mixtures." He is a senior research engineer in the exploratory fuels section of Esso Research and Engineering Company's Baytown Research and Development Division in Baytown, Texas. He received his S.M. in Chemical Engineering at M.I.T. in 1963 and his Ph.D. from the University of Calif. at Berkeley in 1965. . . . **Fran Berlandi** received his doctorate in analytical-nuclear chemistry from the University of Michigan this past spring. . . . **Jan T. Hyde** was engaged a few months ago to Miss Phyllis Shapiro of New York City. They planned to be married in mid-October.—**Jerry Katell,** Secretary, Oceanic Properties, Inc., 1 Bush Street, San Francisco, Calif. 94104

'63

Bob Vernon was married to Alice Johnson of Middlebury College ('64) and Rochester, N. Y., in August. . . . **Stephen Gorad** is working on his Ph.D. in Clinical Psychology at B.U. He married the former Stephanie Hershon and is now living at 320 Harvard St., Cambridge. . . . **Richard Silver** is at M.I.T. working on a Ph.D. . . . **Bob Ratner** is at Sanford working on a Ph.D. in E.E. . . . **Steve Johnson** is at A.D. Little where he met the former Linda Shoer, now his wife. . . . **Fran Dyro** is in her last year at the Univ. of Maryland Med. School. . . . **Theodore Bednarski** is doing postdoctoral research at the U. of Ill. in Urbana after obtaining his Ph.D. at Penn State. . . . **John Lambert** is working for the British government in a city planning project in London. . . . **Claude Fennema** married Judith Anderson of Minneapolis and is now working on his Ph.D. at Johns Hopkins. . . . **Arnold Chalfont** received his M.S. in Educational Psychology from

Indiana U; he is now at the U. of Mich. working on a combined doctoral program in education and psych. . . . **David Claypool** is at Rice with his bride, the former Crystal Yancy of Oklahoma City. . . . **Mike Lintner** was recently married. . . . **Curt Nordgren** is in his third year at the U. of Maryland Med. School. . . . **David Johnson** has finished his army service and is now at Westinghouse again. He now has a boy and a baby girl. . . . **Herb Eagle** is back from a stint with the Peace Corps in India. . . . **Steve Kaufman** has spent several lost weekends in N.Y.C. in the past several months. Steve is still living in Detroit, of course. . . . **Vern Bremberg** is with DuPont working on market development for new fibers. He is living in Kennett Sq., Pa. . . . **John Lockie, Thomas** and Mrs. **Rodriguez,** and **Pete** and Mrs. **Van Aken** represented our class at Alumni Day last June. Remember, we need your cards and letters, and your money. Send the first two to: **Bob Johnson,** Secretary, Apt. 11-J, 245 E. 19 St., New York, N. Y. 10003. Send the money to M.I.T.

'64

I am happy to report that for once I have an actual backlog of class news for future issues. Between returns from alumni contributions, the news clipping service, and letters from classmates over the summer, I have an abundance of news. Please let's try to keep it that way by sending me news of yourself and other classmates you know about during this year. The news in this issue is made up only of information received from the personal letters.

The first classmates to become Class Heroes for this volume of Technology Review by writing letters are the following: Ed Casper, John Meriwether (reported four others), Steve Schlosser (reported five), Don Stewart, Bruce Strauss (reported seven), and Ed Wolcott (reported nine). These boys deserve the thanks of all the readers of this column for supplying the news that sustains these class notes.

Ed Casper received a National Institute of Health Fellowship which will support further work toward his Ph.D. in chemistry at Columbia. . . . **John Meriwether** is studying chemical physics at the U. of Md. John is aiming for his Ph.D. by the coming June, with both NSF and NASA fellowships helping him financially along the way. He reports that riding an S-90 Honda is great. . . . **Steve Schlosser** was married this June after receiving his M.S. in E.E. at Tech. He is now working for the supervisory systems section of the Instrument Department of G.E. in West Lynn, Mass. . . . **Don Stewart** graduated in June from Harvard Business School and was married in August to Elizabeth Allan Gunther, a graduate of B.U.'s School of Nursing. They are living in Panama City, Fla., where Don is stationed at the Navy Mine Defense Lab as a Lt. JG. . . . **Bruce Strauss,** a repeating contributor to this column, hopes to finish his thesis at M.I.T. soon—the faster the better says he. His wife Judi will finish her masters in teaching at Harvard this year and his daughter Lori is growing like a weed at home. . . . **Ed Wolcott** graduated from Harvard Business School this June. He has been married to the former Willa Backley since August, 1965.

And now for the combined news reported by the above: **Wes Akutagawa** is doing grad work at Columbia. . . . **Len Buckle** was married to Suzann Thomas of Newport News, Va., and Wellesley '66 in Boston on June 4. Len is in the Army stationed at Huntsville, Ala. . . . **Pete Cooperberg** is in med school at McGill and is working part time in the Montreal Children's Hospital. . . . **Claude Dean** is with the navy in the South China Sea. . . . **Don Faber** and his wife Jo had a daughter in March by the name of Eve Susan. . . . **Rick Fisher** is in his second year at Harvard Business School and relayed class news to me at an organizational luncheon last May for the M.I.T. Alumni at Harvard. . . . **Steve Glassman,** our Class President, is working for the Patent Office and attending law school at Georgetown in the four-year night program. Steve made law review last year. My wife Betsy and I met him in Washington in late August and he reports that all is well personally and with the class. . . . **Tom Herbert** is reported doing well in biophysics at John Hopkins. His wife Kathy is from Wellesley College. . . . **Joe Kasper** was married in August, two months after receiving his M.S. in Aero at M.I.T. He is continuing for his Ph.D. . . . **Bob Kimmel** worked for the Army Research Lab. in Natick, Mass., for the summer. . . . **John Ludutsky** graduated from the Harvard Business School in June. He is now working for Industrial Neucleonics in New York on sales systems. . . . **Paul McMullin** is studying for his Ph.D. in E.E. at Tech. . . . **George Olah** is working for TRW in Houston. He is married to the former Mary Lou Woods and they have a daughter. . . . **Peter Ordeshook** was seen last summer working at the Institute of Defense Analysis in Washington, D. C. Pete is in grad school in economics somewhere in New York. . . . **Steve Palmer** is a lieutenant with the Marines in Viet Nam. . . . **Ron Randall** graduated from Harvard Business School in June and spent the summer with Massey-Ferguson consulting firm. He is now in the army with a commission. . . . **Gary Rauch** is back at M.I.T. for his Ph.D. . . . **John Reed** is studying at Columbia. . . . **Bob Scott** is engaged to Sherry Fink of Bloomfield Hills, Mich., and Wellesley '64. Sherry works for IBM and Bob is working for Dean Brown at M.I.T. . . . **Bill Siegmann** is continuing for his Ph.D. in math at Tech. He was married last December and should be a proud young father this fall. . . . **Richard Sorbello** has received his M.S. in E.E. and is now working on his Ph.D. in Applied Physics at Stanford. . . . **Buzz St. Aubin** is in law school at U. of Penn. and is reported doing fine. His wife Deana was a Simmons student. . . . **John Timoshenko** received his M.S. in E.E. this June at U. of Conn. He was married to Beverly Wentzell on the 18th of that month. . . . **Gary Walpert** is working on his Ph.D. in E.E. at Tech. He was married in September. More news next month. Let me hear from everyone.—**Ron Gilman,** Secretary, 202A Holden Green, Cambridge, Mass. 02138.

'65

Greetings and many thanks for the letters and news notes which have started coming in. **Jim Pepe, Joe Greenwald, Jim Taylor, Dick Schmalensee,** and myself spent the last weekend of the summer attending the wedding of **Matt Mleziva** and Brenda Sargent. Matt is remaining at M.I.T. and is working on an Engineer's Degree in E.E. . . . **John Torres** and his wife Patty are living in Charleston, S.C. while John finishes up his NROTC tour of duty at the naval shipyard there. . . . **Ralph Cicerone** is in the E.E. doctoral program at the U. of Ill. . . . **Chuck Seniawski** is stationed at the Malmstrom AFB in Great Falls, Mont., and is serving as a maintenance officer for minutemen missiles. . . . **Roger McCoy** is now working for Le Messurier-Boston as a structural engineer; he also has a year-old son named Christopher. . . . **Terry Priebe** and his wife Susan had a baby girl last December. . . . **Leland Neuberg** is in the doctoral program in math at Northwestern. . . . **Eugene Grumer** is working for Celanese as a research engineer in their economics evaluations group. . . . **Barry Pollack** received his M.S. in Computer Science at Stanford and is currently continuing for his doctorate. . . . **Henry Murdock** is working at Block Engineering in Cambridge. . . . **Richard Ayers** is living in Westboro, Mass. and is a development engineer at Wyman-Gordon. . . . **Mike Levine** and Bonnie Gerzog were married last June. . . . **Jim Weil** is returning to UCLA for his masters after working in the engineering research department of Pacific Gas and Electric Company. . . . **Stan Brown** is an ensign on the flagship Columbus and seems to spend most of his time shuttling between the Caribbean and the Mediterranean. . . . **Charles Seay** is working for the Enjay Chemical Company in Baytown, Texas. . . . **Chris Miller** is married and is working for Hughes Aircraft in Arizona. . . . **Bill Evers** married Barbara Mayo and is now at Cornell. . . . **John Ottesen** is studying physics at U. of Ill. . . . **Bill Samuels** will be a second year student at Harvard Law and spent the summer on the New York political trail with his father. . . . **Ed Hoffer** married Pamela Stuck this September and is now at the Harvard Med. School. . . . **Jim Bochnowski** is stationed at the army's Redstone Arsenal. . . . Both **Jesse Lipcon** and **John Sinnott** are working at McDonnell Aircraft. . . . **Carol Van Aken** is working in the M.I.T. Div. of Sponsored Research. . . . **George Berry** married Jeannie Bialka and is now at the Sloan School. . . . **John Hoag** is with the Systems Equipment Div. of Western Electric

in Chicago. . . . **Mark Stein** is at UCLA's med. school. . . . **Jeff Karas** is married to the former Miss Regina Goldin and is working on his masters in math at UCLA. . . . **Tom McAuley** is at Sinclair Research in Harvey, Ill. . . . **Dick Sherman** received his E.E. masters at Cal. Tech. . . . **Gilbert Mowery** received his masters in industrial administration from Carnegie. . . . **Ken Campana** is a 2nd Lt. in the Army Signal Corps. . . . **Jim Phelps** is a Peace Corps worker in Malaysia. . . . **Cal Cordulack** married Miss Marian Ladd of Wellesley. . . . **Andrew Harris** is now working for Bolt, Beranek, and Newman in Cambridge. . . . **Bill Roeseler** and his wife Molly are expecting; he will be working for Boeing in Seattle. . . . **Don Fredrickson** has spent the past year studying physics in Munich and he will be attending the U. of Grenoble this fall. . . . **Sid Everett** finished his masters and has left for Stanford. . . . **Steve Ivester** is working for Polaroid in Cambridge. . . . **J. D. Roach** seems to be having a fairly easy time at Stanford Business School. . . . **John Holdren** is studying aero at Stanford. . . . **Frank Mechura** married Paula Cummer and is a second year student at Harvard Business School. . . . **Ron Mandle** is playing lacrosse for the BLC and is at the Sloan School. . . . **Tom Callahan** quit globetrotting for the Smithsonian Inst. and is now working at the Instrumentation Labs. . . . **Dave Carrier** is married and in Course I grad school. . . . **Jim Hester** is going on for his doctorate in aero. . . . **Cliff Wienstein** and **Bob Thomas** are finishing up their master's theses. . . . **Jay Groves** is studying chem at Columbia. . . . **Cash Peacock** finished his army basic training. . . . **John Proctor** is working for General Motors. . . . **Joe Dyro** and **Ed Burke** are roommates at U. of Penn. . . . **Jim Piepmeier** is studying physics at Cambridge, England. . . . **Steve Ward** is working at the Science Teaching Center. . . . **George Kinal** is studying physics at Stanford. . . . **Hal Murray** is with the Computer Corp. of America. . . . **Mike Keehner** married Diane Temple in June and is working for General Dynamics in Quincy. . . . **Roddy McLeod** will be a first year student at the "B" School this fall. . . . **Ed Strauss** is working for the Hughes Tool Company and has been working on helicopter installations in the Far East. . . . **Kim Kimberling** is married to the former Miss Linda Ettelson and is now working for his doctorate in Course III.

That's all the notes I have for now. Keep sending in news. My address remains **Jim Wolf,** Secretary, McCulloch C-41, Harvard Business School, Boston, Mass.

'66

By the time that this article reaches all of you, graduation will be just a memory, and the Class of 1966 will have begun its steady move out of Cambridge. It is impossible, of course, to record the pursuits of all the members of our class, but I hope that this first article will highlight some of the representative activities of our class. The ties with Cambridge remain strong for many; as I look over the winners of National Science Foundation awards, I find that almost half will be returning to M.I.T. next year. Included in this group are **Thomas B. Jones, Leonard Silver, Robert Poole, Stuart Spitzer, Michael Johnson,** and **Ralph Schmidt.** Those leaving M.I.T. show just a portion of the extensive variety of interests that characterizes our class. **Charles Smith** moves to Cal Tech for studies in Biology. Also from Course VII **Peter Lobban** will continue his studies at Stanford. Another NSF Fellow at Stanford will be **Robert Zucker. Ann Kazanow** has chosen the University of Chicago. **Richard Palmer** and **Gilbert Shaffer** have found the ivy of Princeton appealing. **Bruce Olsen** has taken his fellowship at Columbia, while **Timothy Karpetsky** will go to Johns Hopkins.

David Wyss, a Woodrow Wilson Fellow, will go to Harvard next year. . . . **Gerald Wolpin** is making his plans to go to England as a Churchill Fellow. . . . Included in the graduate pursuits of our class will be the sciences and engineering as one might expect, but also there are many individuals continuing studies in the humanities, the arts, medicine, law, and even theology. This last group includes **Alan Newhall,** who will be working toward a Doctor of Religion at the School of Theology, Claremont, Calif. **Alan Tobey** is soon to enroll at the Luther Theological Seminary. . . . The Peace Corps is taking many of our classmates to the far corners of the World. **Ray Pfau** will be teaching in a university in the Philippines next year. **Richard Cutter** is off to Peru to work on urban community development. **Steve Woolf** will be located in Venezuela. Other Peace Corps volunteers are **Dave Cressy** and **Roger Rasmussen**. . . . No doubt my list of those entering military service is incomplete, and I even suspect that some of you who were not planning on it may have received a draft notice between graduation and the time you read this article. Just a few of those receiving commissions and taking their active tour of duty now include **Duncan Rhodes, Thomas Hutzelman, William Klepser, Ray Petit,** and **Harry Barnes.**

Just to mention a few of those going to work next year: **John Flick** will be associated with Hughes Aircraft. . . . **Jack Turner** assumes a position with Raytheon, while **Bob Wiley** rounds out the aerospace trend with his employment with NASA. . . . **David Vanderscoff** begins an actuarial traineeship with the New York Life Insurance Company. . . . **Jon Mikesell** has accepted a teaching position in the Math and Physics Departments at Alabama A. and M. College. . . . **Tim Connelly** leaves for California and the Lawrence Radiation Labs. . . . **Logan Donnel** will be associated with Simpson Gumpertz and Heger in Cambridge. . . . **George Simpson** has accepted a position as chemical engineer with Sinclair Research, Inc. . . . A number of people have chosen some noteworthy summer jobs. **Fred Stone** will be working for Shell Oil in Holland before beginning graduate studies at Harvard. . . . **Bernard Mathaisel** continues his studies in Aero at M.I.T. with a summer break at the headquarters of Swissair Airlines in Switzerland. . . . **Robert Zucker** will be working for M.I.T. on the new dormitory program. . . . **Bo Pasternack,** recent recipient of the Aero Department's James Means Award for senior excellence, will be working on the Surveyor Project at the Jet Propulsion Laboratories in Pasedena, Calif., before returning to M.I.T. **Sonja Sandberg** has decided to take a three-month tour of Europe with a former '66 classmate Sue Hemley, who completed her studies at Radcliffe.

John Adger, Ken Browning, and **Hank Perritt** will be members of the M.I.T. Administration next year while continuing their graduate studies. Ken will become a special assistant to the Dean of Student Affairs. John will be associated with Vice-president Kispert's office, while Hank will become an assistant in the Placement Office. . . . June, of course, has been a month of weddings for many of our classmates. **Leonard Silver** was married to the former Miss Miriam Arenberg of Simmons College on June 12. . . . **Peter Young** and Miss Ellen Roberts were married on June 4. **Rob Wesson** took the former Miss Corky Van Kleeck of Wellesley as his wife on June 11. **Den Sivers** was married to Miss Penny Welch on June 18. **George Randall** and Miss Cynthia Sharp of Radcliffe College on June 19. Others taking brides in June include **David Wyss, John Esterl, Mike Kraus,** and **Paul Branstad.**

Your class Secretary, **Gene Sherman,** was married to the former, Miss Susan Shapiro of Boston University on July 3. There will be a brief report on the honeymoon advantages of Bermuda in the next issue for those of you who may be contemplating such a trip in the not too distant future. **William Goldberg** will be married to Miss Susan Schechter on August 7. **Tom Brylawski** and Miss Joan Mills, the Queen of APO Carnival this year, will be married on August 21. **Fred Webb** and Miss Cynthia Woods of Hampden, Mass. have become engaged. **Tom Gomersal** recently announced his engagement to Miss Judith Miller of Cupertino, Calif. Also, **Sarosh Sukhia** and Miss Nancy Jameson of Rochester, N.Y., have announced their engagement. It is interesting to note that these past years have formulated some binding relationships between some of the male and female members of our class. **Michael Johnson** and Miss **Pat Smrz** were married on June 11. **Howard Chatterton** and Miss **Margaret Shork** will be married later this summer. **John Dingler** and **Janet Romanowych** have announced their engagement.

Congratulations are in order to Mr. and Mrs. **David Wilcox** upon the birth of a 7½ pound daughter on May 8, 1966. Mr. and Mrs. **Ronald Muhlenkamp** became the proud parents of their second son in May.

Between now and fall there should be lots of news with the class, and I hope that all of you who have items of interest to report will take out a moment to send me a news clipping or a letter. Most of our class officers will be at M.I.T. next year, so I hope that those of you who see them will

keep them posted with news for this column. Class President **Bill Byrn** will be at the Sloan School along with **Rusty Epps.** Veep **Terry Vanderwerff** will be working toward his masters degree in Mechanical Engineering. Executive Committee members **Joel Talley** and **Don Schwanz** move up the river to the Harvard Business School. **Judy Risinger Perrolle** will be teaching in a private school in Providence, while **Gary Schlieckert** will be at the University of Illinois. I will be starting the long road toward an M.D. degree at the University of North Carolina Medical School, and I look forward to receiving news from all of you.—**Gene Sherman,** Secretary, Willow Terrace Apts., Apt. #74, Chapel Hill, N.C.

Graduate Students

Course VI

This afternoon, September 12, the due date for material for this column, Dean **Gordon S. Brown,** '31, assembled the Electrical Engineering Department to announce and present its new Head, Professor **Louis D. Smullin,** S.M. '39. Professor Smullin came to M.I.T. for graduate work in 1938, following his undergraduate work at Wayne University and the University of Michigan (B.S.E. '36) and engineering experience with Ohio Brass Company where he worked on properties of insulators including flashover and radio interference studies. He has also held enginering positions with Farnsworth Television Corporation, Bendix Aviation Corporation and Federal Telecommunications Laboratories and has been consultant to many other companies. His recent work has dealt with microwave tubes and beam-plasma research. He organized and headed the tube laboratory at M.I.T. and from 1952 to 1955 was on E.E. Department leave as head of the weapons division at Lincoln Laboratory. His research activities led to the development of his graduate subject Beam-Type Microwave Tubes and he has supervised many graduate theses in this area. He has been one of the prime movers in the department's Electrical Science and Engineering program which has so successfully met the needs of research oriented undergraduate students. He has just returned from India where he has been teacher and adviser at the Indian Institute of Technology at Kanpur during the past year. The appointment as Head of the Electrical Engineering department is effective immediately. About a year ago the recent Head, Professor Peter Elias, requested to be relieved of the responsibility to return to his professional activities in information theory, but he has continued the administration of the E.E. department until his successor was named.

Dr. **N. Paul Loomba,** S.M. '54, was named Vice-president for Operations Research of the Ogden Corporation, it was recently announced by Ralph E. Ablon, President of Ogden, a large diversified operation company in shipbuilding, metals, hospital supply equipment, food and filtration. Before joining Ogden, Dr. Loomba, 39, taught for five years at Lehigh University, most recently as Head of the Department of Management Science and Director of Lehigh's graduate program of Management Science. During this period he acted also as consultant to several companies, including Beech Aircraft, Air Products and Chemicals, Inc., Pennsylvania Power and Light Company, and Bethlehem Steel Corporation. In addition to his M.I.T. degree Dr. Loomba holds a B.S. in Physics and Chemistry from the University of Punjab, India; a B.S. in Mechanical and Electrical Engineering from the University of Nebraska; and a Ph.D. in Industrial Management from the University of Wisconsin. Dr. Loomba has written two books: Engineering Economics for Decision-Making, and Linear Programming, the latter a Book-of-the-Month selection of the Library of Science Book Club. He is also a frequent contributor of articles to professional and scientific journals in the field of management science and industrial engineering. Dr. Loomba has been elected to membership in the following honorary societies: Pi Mu Epsilon, Eta Kappa Nu, Sigma Xi, Order of Artus, Beta Gamma Sigma, and Omicron Delta Kappa. He is a member of the Academy of Management, the American Economic Association, the Institute of Management Science, and the Operations Research Society of America.

Carl M. Ferrar, S.M. '60, E.E. '62, has been teaching at the University of Connecticut during the past academic year while he was enrolled as a doctoral student in aerospace engineering there. He and his brother Joseph were valedictorians of their respective classes at the Okemos, Mich., High School, were scholarship students at Michigan State University, and were awarded doctorates on June 13, 1966, Carl in aerospace engineering from the University of Connecticut and Joseph in mathematics from Yale. . . . **Kerns H. Powers,** Sc.D. '56, has been appointed Director of the Communications Research Laboratory at the David Sarnoff Research Center of the Radio Corporation of America in Princeton, N. J. Dr. Powers has been associated with RCA Laboratories since 1951 as a specialist in communications research, and during the period of doctoral study at M.I.T. he worked under the supervision of Professor Y. W. Lee in the area of statistical communications networks and systems. Since 1959 he has been in charge of communication system studies in connection with a major Navy-RCA project, and until his new appointment he was Technical Director, New Systems, of the Special Products Laboratory at the David Sarnoff Research Center.

Irwin M. Jacobs, S.M. '57, Sc.D. '59, has resigned his Associate Professorship of Electrical Engineering at M.I.T. to become Associate Professor in the Department of Applied Electrophysics at the LaJolla campus of the University of California. Professor Jacobs authored last year a modern treatment of communication theory entitled "Principles of Communication Engineering" (with Professor John M. Wozencraft, Sc.D. '57) stressing the probabilistic aspects of communications. At LaJolla Dr. Jacobs looks forward to the formation of a new department along the lines of his communications interests. **Herschel M. Loomis,** Jr., Ph.D. '63, visited M.I.T. on June 30 and reported that he is assistant professor of electrical engineering at the Davis Campus of the University of California and is teaching computer design and mathematical machine theory. He says that **Ralph Algazi,** S.M. '55, Ph.D. '63, is also assistant professor in the same department and is developing graduate courses in detection theory and systems, signals and noise. Dr. Jacobs and Dr. Loomis were top students in their respective Electrical Engineering classes at Cornell before coming to M.I.T. Dr. Algazi came to M.I.T. in 1954 from Ecole Supérieure d'Electricité in Paris. From 1955 to 1958 he was employed by Westinghouse Electric Company as Development Engineer in the fields of servomechanisms, magnetic amplifiers, and transistorized power converters. Following his doctorate, he spent two years as Assistant Professor at M.I.T.

Another M.I.T. visitor was **William A. Youngblood,** Sc.D. '58, who was attending the summer conference on Management of Research and Development. Currently Dr. Youngblood is head engineer in the Washington, D.C., Project Office of the Naval Ship Systems Command. He is responsible for the sonar suit for nuclear attack submarines. Following his doctoral work at M.I.T. he was associate professor of electrical engineering at his Alma Mater, the University of Texas. In 1962 he joined TRACOR, Inc. in Austin, Texas, where his interests were software research and development in acoustics and electronics for hydro-space applications. . . . Dr. **Harold A. Spuhler,** S.M. '50, has resigned as head of Texas Tech's Electrical Engineering department to become a member of the Evaluations Group, Graduate Science Facilities Section in the Division of Institutional Programs of the National Science Foundation in Washington. Quoting from the Texas Techsan, Dean Bradford said, "Dr. Spuhler has rendered invaluable service in the building of a fine department with an outstanding curriculum. We wish him the greatest good fortune in his new position." Upon completion of his graduate work at M.I.T. he returned to his Alma Mater, Texas Tech, as Assistant Professor of Electrical Engineering and was subsequently promoted to Associate Professor. He took leave in 1956 to study for the Doctorate at University of Illinois where he worked under an Atomic Energy Commission grant on sources of radiation at submillimeter wave lengths, specifically with means for generation of high-energy electron beams with high harmonic content. Other research on electron bunching accelerators was sponsored by the National Science Foundation.

Harvard Business School has announced that **Brian D. King,** S.M. '60, was awarded the degree Master in Business Administration with distinction on June 16. He was one of 58 men to have achieved this academic standing out of a graduating class of 649. He entered

M.I.T. in 1958 following an honours course at Cambridge University. . . . **Ronald D. Haggarty,** S.M. '61, has recently been made head of the Advanced Techniques Subdepartment of MITRE Corporation in Bedford, Mass. He entered Lincoln Laboratory as a junior staff member upon graduation from Manhattan College in 1957, working on radar modulation studies under Mr. **Herbert G. Weiss,** VI '40, and later applied for graduate work at M.I.T. . . . Dr. **Nelson C. Maynard,** S.M. '62, received the Ph.D. in Physics at his Alma Mater, the University of New Hampshire in June 1966 and has been employed since last November by NASA at the Goddard Space Flight Center. . . . **James D. Mills,** S.M. '65, E.E. '66, will be studying for Ph.D. in applied mathematics (computer science) at Harvard 1966-67. . . . **Henry Reinecke,** Jr., S.M. '60, is with Monsanto Company as systems manager in the new venture in electronics. A baby girl, Sheila Dawn, was born January 30, 1966. . . . **Jaswant G. Krishnayya,** S.M. '60, E.E. '61, is returning to India to teach "quantitive methods" at the Indian Institute of Management, Ahmedebad, one of two schools related to M.I.T. and Harvard Business School through Ford generosity. Several M.I.T. staff members have worked at the I.I.M. Calcutta. . . . **Jack Hilibrand,** Sc.D. '56, is now manager, Industrial Semiconductor Engineering for RCA in Somerville, N.J.—Professor **Karl L. Wildes,** Correspondent, Room 4-232, M.I.T., Cambridge, Mass.

Sloan Fellows and Senior Executives

Edward S. Gill, '58, has assumed his new duties as Vice-president, long-range planning, for the Bell Telephone Company in Philadelphia. Before receiving his new assignment, he was general operations manager for Bell's central area in Harrisburg. . . . **Richard L. Terrell,** '58, is now General Manager of the Frigidaire Division, and a Vice-president of General Motors Corporation in Dayton, Ohio. He formerly was General Manager of Electro-Motive Division of General Motors Corporation at La Grange, Ill. . . . **John P. Eberhard,** '59, is now director of the NBS Institute for Applied Technology and will direct programs in engineering standards, building research, electronic instrumentation, textile and apparel technology, technical analysis, and invention and innovation. . . . **Carl R. Gloskey,** '59, has been elected Vice-president of M&T Chemicals, Inc. . . . **James W. Milne,** '59, has been elected by Abbott Laboratories in Chicago as Vice-president, manufacturing. . . . **B. John Yeager,** '59, was re-elected a Vice-president and appointed general manager of the Cincinnati Gas & Electric Company. His new duties will put him in charge of all production in the gas, electric and general engineering departments. . . . **Warren A. Welsh,** '60, assuming responsibility for planning, specifying and qualifying information technology systems in the fields of engineering, resource control and administration, has been named Director of Information Systems Engineering of the Western Electric Company. . . . **C. F. Grisette,** '61, was appointed assistant works manager by the Tennessee Eastman Company in Kingsport. . . . **James L. Powell,** '63, will become administrative assistant to A. N. Prentice, Vice-president and general manager of Ohio Power Company in Canton. Among his special assignments will be power plant operations, work simplification, better methods program, cost control, budgets and forecasts, and physical workers' training program. . . . **Joseph W. James,** '64, in his new post as manager of product planning and chief engineer for Chrysler and Imperial passenger cars of the Chrysler- and Plymouth Division, Chrysler Corporation, will be responsible for Division product planning as well as engineering services for Chrysler and Imperial cars. . . . **Kenneth A. Charon,** '66, has been promoted to assistant plant manager at the Greenock, Scotland, plant of IBM—United Kingdom, Ltd. . . . **Joseph Fernandez,** '66, has been appointed Chief of the Management Analysis Branch at NASA's Electronic Center in Cambridge. In his new position Mr. Fernandez will review and analyze operating programs at the Center, conduct management research studies and furnish information on management theory and practices. . . . **David W. Beardsley,** '62, who passed away on April 12, had been with General Motors since 1943. In 1963 he became manager of the gear and axle plant, and in 1966 the head of the forge plant.

Club News

M.I.T. Club of Boston: Politicians, Professors and President

Four of the year's remaining programs have been announced by the M.I.T. Club of Boston:

December 8: Professor Douglas P. Adams on "Dame Boston—Her Foibles, Fables, but Mostly Fripperies."

January 12: Professor Charles S. Draper, '26, on the work of the National Inventors Council, of which he is chairman.

March 9: William M. Wolf, '56 on two related subjects: how to start your own company and how to solve its computer complications, the latter being the primary service of Mr. Wolf's Wolf Research and Development Company.

April 13: President and Mrs. Howard W. Johnson at the M.I.T. Faculty Club.

In addition, there are to be meetings on November 10, February 9, and May 11 for which the program will be announced. All (except April 13, which is a dinner meeting) are at the Union Oyster House, 41 Union Street, Boston, with cocktails at 12 noon, lunch at 12:15, and adjournment by 1:30. Luncheon is $1.90, payable at the door.

The Boston club has already scored two notable successes this year, with overflow meetings for Governor John A. Volpe and the Honorable Edward J. McCormack on September 22 and October 13. Both gubernatorial candidates gave candid views of Massachusetts' problems and their proposed solutions, and it goes without saying that both meetings were lively affairs indeed.—Eugene M. Darling, Jr., '53, Secretary-Treasurer, Room E19-437, M.I.T., Cambridge.

M.I.T. Alumni at Harvard: "Mens, Veritas, et Manus"

Twenty-seven M.I.T. Alumni then in the Harvard graduate schools attended the founding meeting of a new M.I.T. Alumni group at the Harvard Faculty Club on May 19. The speakers were the two cooperating university presidents, Julius A. Stratton, '23, and Nathan M. Pusey; before their addresses, both participated in a special ceremony in which a "Mens et Manus" M.I.T. shield was changed to read "Mens, Veritas, et Manus."

Plans for the current season are now being developed.—Jeffrey A. Meldman, '65, President, Room 200, Ames Hall, Cambridge, Mass., 02138.

M.I.T. Alumni Center of New York: Five Lectures, Four Seminars, One Luncheon

Five sessions remain the in six-lecture series on "The Future of Education in a Changing World" sponsored jointly by the M.I.T. Alumni Center of New York and the New York Harvard club:

November 16: "Learning to Match Progress," Walter A. Rosenblith, professor of communications biophysics, M.I.T.

February 1: "Trends in Graduate Education," Charles P. Kindleberger, professor of economics, M.I.T.

March 1: "Education of the Urban Poor," Daniel P. Moynihan, director of the Joint Center for Urban Studies of Harvard and M.I.T.

April 5: "Why Teach Science?" Jerrold R. Zacharias, Institute professor (physics) and Philip Morrison, professor of physics, M.I.T.

May 3: "The Role of Private Industry in Education," Francis Keppel, chairman of the board of General Learning Corporation. The series began with a gala reception and concert of the Festival Orchestra of New York at Philharmonic Hall, Lincoln Center, on October 5 in honor of President and Mrs. Howard W. Johnson and a lecture on "New Views on Teaching" by Jerome S. Bruner, director of the Center for Cognitive Studies at Harvard, on October 19. Remaining lectures in the series will be at the Harvard Club of New York City, 27 West 44th Street; a reception and buffet supper will be available at the Harvard Club preceding each lecture.

Four future sessions of the Alumni Center's marketing seminar have been announced:

November 7: "Management of the Pricing Function," Carl Nelson, vice president—marketing, Standard Oil Company (New Jersey).

December 5: "Marketing Research," Leonard F. Newton, '49, vice president, Opinion Research Corporation.

January 9: "The iDstribution Function," James B. Farley, vice president, Booz, Al-

M.I.T. Club of Los Angeles: A tour of Los Angeles harbor brought out 226 members of the Club and their families on August 6. In the picture (top), Morris Hogan of National Metal and Steel Corporation leads a tour of company facilities.

M.I.T. Alumni Center of New York: A memorable evening was provided by the Center on October 5 at a reception and standing-room-only concert by the Festival Orchestra of New York in Philharmonic Hall at Lincoln Center in honor of President and Mrs. Howard W. Johnson. The reception principals in the picture (center) are, left to right: Mr. and Mrs. Dayton H. Clewell ('33), President and Mrs. Johnson, Mr. and Mrs. Angus N. MacDonald ('46), and Mr. and Mrs. Harold W. Fisher ('27).

M.I.T. Club of Boston: Edward J. McCormack, Democratic candidate for governor of Massachusetts, poses with Paul E. Weamer, '49, president of the Club, and President Howard W. Johnson of M.I.T. during a luncheon meeting at which McCormack spoke on October 13.

PHOTO: PORT OF LOS ANGELES

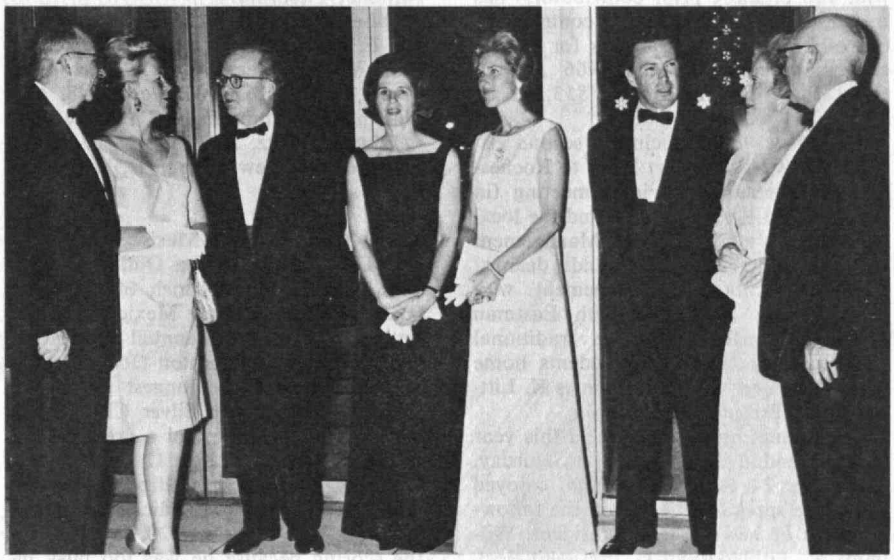

PHOTO: WHITESTONE

len and Hamilton.

February 6: "Systems Selling," T. W. Wagner, manager of product marketing, Data Processing Division (eastern region), International Business Machines Corporation.

John H. White, president of National Education Television, will speak on "Educational Television Today and Tomorrow" at a luncheon meeting of the M.I.T. Alumni Center of New York on Wednesday, December 7.

Angus N. MacDonald, '46, is chairman of the Activities Committee of the Center; Dayton H. Clewell, '33, is general chairman of the Center and Harold W. Fisher, '27, is deputy chairman. For information and reservations at future events, call the undersigned.—James N. Phinney, executive secretary, 866 United Nations Plaza, New York, N.Y., 10017 (752-5125).

M.I.T. Club of Rochester:
Tradition Maintained.

Seven Rochester-area boys were offered admission to M.I.T.'s Class of 1970, and four accepted. And Rochester's tradition of Alumni Fund leadership (in regions with 100 or more prior contributors) has been maintained; we had 223 contributors out of 275 prior contributors for 81 per cent participation in the 1966 Alumni Fund. Contributions totalled $13,353 vs. $7,394 last year.

Plans for 1966-67 include a second visit by the M.I.T. Concert Band to Rochester on February 3; a joint meeting (in April) of the Rochester club and the local chapter of the Institute of Management Sciences with William F. Pounds, dean of the Sloan School of Management, who was formerly associated with Eastman Kodak Company; and the traditional Christmas luncheon with students home from M.I.T. on vacation.—James K. Littwitz, '42, President (1965-66).

The annual meeting was held this year at the Mendon Ponds Park on Saturday, September 24. About 40 alumni enjoyed the picnic spread and voted in the following slate of new officers: President, William A. Pitbladdo, '31; President-elect, John D. O'Brien, '51; Vice-president, Andrew C. Price, III, '50; Treasurer, Reynold A. Grammer, Jr., '47; Secretary, W. Blake Foster, '60; Assistant secretary, L. David Sikes, '63.

M.I.T. Club of Washington:
Ambitious Plans for 1966-1967

Current officers of the M.I.T. Club of Washington are Gilbert H. Lewis, '51, president (Bethesda, Maryland, 656-65-31); John J. Phillips, Jr., '38, first vice president (Washington 338-8792); Richard R. Martin, '45, second vice president (Rockville, Md. 949-8840); Merlyn J. Block, '41, secretary (Chevy Chase, Md. 652-8915); and Dan R. McConnell, '61, treasurer (Suitland, Md. 735-2562).

The 1966-67 program will be varied and stimulating. A record of 130 members attended the traditional opener—a beer party on September 13 at the Potomac Boat Club. A month later Professor William W. Seifert, '47, who is director of M.I.T.'s Project Transport, spoke at the Cosmos Club on the Northeast Corridor transportation problem. In February the Washington club and the Sloan School will join forces to sponsor a management seminar in which Alumni, Sloan Fellows, and industry and government leaders will participate. There will be dinner meetings featuring major speakers in January, March, and April; the annual Christmas meeting for prospective M.I.T. students; and the traditional spring cocktail party. The M.I.T. Dames of Washington are again planning a program of interest to wives of alumni. And the Downtown Luncheon Club will again meet monthly to discuss topics of interest; call Lewis Fong at NASA, 962-7695. All area and visiting Alumni and guests are welcome at any of these activities.—Dan R. McConnell, '61, 4134A Suitland Road, Suitland, Md., 20023.

M.I.T. Club of Chicago:
Six New Leaders

E. Alfred Picardi, '44, was elected president of the M.I.T. Club of Chicago at its annual meeting last June at the Argonne National Laboratory.

Other new officers chosen include Joseph E. Dietzgen, '41, vice president; and John W. Barriger 3rd, '21, Gerson E. Myers, '57, William J. Weisz, '48, and Martin E. Zimmerman, '59, directors.

Edward Stoltz, Jr., '45, was re-elected treasurer and Lewis Tyree II, '44, secretary.

M.I.T. Club of New Mexico:
The Limit at the Spring Outing

Tres Lagunas, guest ranch of the three lakes, in Terrero, New Mexico, was the setting for the Club's annual spring outing last May. M. Thornton Dow, '22, and Mrs. Dow came the longest distance—some 350 miles from Silver City. In all, it was a fine reunion and a great delight for the fishermen. Carter L. Bennett, '42, and Mrs. Bennett and Alfred C. Switendick, '53, and Mrs. Switendick each caught the limit; Will W. Boyer, '20, did not enter the scoring because he was too busy instructing his young granddaughters in the finer arts of the sport.

Paul Gardner, '17, of San Patricio, New Mexico, has assumed charge of the Lincoln County State Monument. In the late 1800's Lincoln County was the scene of violent cattlemen's wars, and bullet holes in the walls of the county court house (a part of the Monument) are a lively reminder that Billy the Kid escaped from confinement in the jail. It is from Lincoln County that Smokey the Bear began his trek to fame. There is so much history in the area that Paul is sure to be a very busy man.—Thomas J. Raftery, '31, Acting Secretary.

M.I.T. Club of Northern California:
Orientation at the Stanford Linac

In addition to the undersigned, officers for 1966-67 include George W. Bond, Jr., '57, vice president; Barrett B. Roach, '62, vice president; and Robert E. Spivock, '62, treasurer and acting secretary. All were elected at the annual meeting last spring (at Cliff House, one of the world's most scenic spots) at which Samuel A. Groves, '34, then president of the Alumni Association, spoke.

Denman K. McNear, '48, chairman of the Educational Council in the San Francisco area, gets credit for most of the success of the August 27 freshman orientation meeting. Seven members of the Class of 1970 (including two girls) were our guests for a field trip to the Stanford Linear Accelerator in Menlo Park, and we had a near-record turnout of 123 alumni and their guests, including eleven M.I.T. undergraduates home for the summer. Dinner was followed by a talk and tour, during which the head of the accelerator center's public information department explained the background, layout, and future plans for the two-mile-long machine on 400 acres of rolling California terrain just north of Stanford University.—Paul P. Shepherd, '57, president, and Roger S. Borovy, '56 (Fairchild Semiconductor, 313 Fairchild Drive, Mountain View, California, 94040), vice president.

M.I.T. Club of Southern California:
Special Advice for the Class of 1970

The M.I.T. Club of Southern California's annual dinner for entering freshmen (Saturday, July 9, at the home of Robert Welles, '15) brought together 29 M.I.T. undergraduates with 14 members of the Class of 1970. Robert H. Bosler, Jr., '67, Joel P. Robinson, '68, Peter A. Getting, '67, and Arthur S. Warshaw, '67, spoke on academic affairs, athletics, cultural activities and social affairs, and there was a lively interchange of questions and answers about transportation, eating, religious activity, laundry, and the Boston weather. Seventeen members of the Educational Council, club officers, and several wives joined the party.—Antonio D. Schuman, '58, assistant secretary.

M.I.T. Club of Central Florida:
Florida Directory is Ready

Thanks to the diligent efforts of Donald E. Burke, '46, and Clinton B. Conway, '24, the Florida Alumni Register promised in this column of Technology Review in June is now a reality. Containing 1,071 names and addresses, the register lists alumni alphabetically by class (starting with Frederick W. Harris, '95, of New Smyrna Beach). Individual copies of the register are 75¢; for clubs wanting five or more copies, the price is 50¢ each. Address orders to Eugene D. Purdum, '48, address below.

A fall organization meeting, to arrange this year's program and to hear reports on the September Alumni Officers' Conference in Cambridge, was attended by the officers, D. James Athan, '54, president; Mr. Conway, vice president; and the undersigned, and four members of the board of directors: Mr. Burke, Amasa M. Holcomb, '04; William H. Mills, '34; and Harold Radcliff, '41.—Eugene D. Purdum, '48, secretary, 2698 67th Street North, St. Petersburg, Florida, 33710.

MEN ON THE MOVE . . .
INTENT ON WHERE THEY'RE GOING

The Coop's Men's Clothing and Haberdashery Departments offer the finest in men's wear, now in greater variety than ever before. You'll discover top-quality apparel, furnishings and grooming aids . . . all to keep you handsomely in style . . . all priced for the thinking man's pocketbook.

Specially featured are leisure-styled blazers and slacks by Freedberg of Boston, pictured above, and famous Permanent Press raincoats by Plymouth of Boston.

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OUR 50th ANNIVERSARY YEAR

How Vibration Analysis Saves Uncle Sam $1500 on a "Vietnam Service Call"

Boeing's "Chinook" helicopters in Vietnam are providing better service at less expense to Uncle Sam, thanks in part to GR's Type 1564-A Sound and Vibration Analyzer. Reporting from the combat zone, where these helicopters average well over 2500 flying hours per month, field-service engineers of Boeing's Vertol Division tell of consistent success with the analyzer. They spot potential problems in the helicopters' engines, transmissions, drive shafts, and auxiliary equipment as part of normal preventive maintenance procedures. Early diagnosis of impending trouble helps keep these modern-day pack mules in service when they are so badly needed. For a bonus, Uncle Sam saves at least $1500 in shipping costs alone each time a transmission can be repaired in the field.

Engineer measures the frequencies of the vibration components in a helicopter transmission. He can then track down the vibration sources by relating the measured frequencies to the characteristic speeds of the various transmission parts.

The measurements are made with a GR Type 1564-A Sound and Vibration Analyzer and a GR Type 1560-P52 Vibration Pickup. Vibration frequencies from 3.8 to 250 Hz (corresponding to 228 to 15,000 rpm) are measured, with an accuracy of ±2%. System sensitivity is better than 0.001g. The analyzer has two bandwidths: 1/3 octave, for measurements where small variations in speed are encountered; and 1/10 octave, for precise discrimination between components closely spaced in frequency.

In-flight measurements are another important capability of this system, since the analyzer is powered by rechargeable nickel-cadmium batteries.

The full 2.5-Hz-to-25-kHz range of the analyzer will be needed for Boeing's Vertol Division's next-contemplated project: trouble-shooting in hydraulic systems.

Type 1564-A
Sound and Vibration Analyzer .....$1275 in U.S.A.

Type 1560-P52
Vibration Pickup .....$ 100 in U.S.A.

Photos courtesy of the Boeing Company, Vertol Division, Morton, Pennsylvania

Do you have a noise or vibration problem? One of many GR instruments can help you find the answer. Give us a call or write for a copy of the "Handbook of Noise Measurement," $1.00 postpaid.

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